J. H. LAMBERT
SUPPLEMENTA TABULARUM LOGARITHMICARUM ET TRIGONOMETRICARUM

AUSPICIIS
ALMÆ ACADEMIÆ REGIÆ
SCIENTIARUM
OLISIPONENSIS
CUM VERSIONE INTRODUTIONIS
GERMANICÆ IN LATINUM SERMONEM,
SECUNDUM ULTIMA AUCTORIS CONSILIA AMPLIFICATA.
CURANTE
ANTONIO FELKEL.

OLISIPONE
EX TYPOGRAPHIA REGIÆ ACADEMIÆ
SCIENTIARUM.
ANNO MDCCXCVIII.
Permiſſu Regio.

Grandia jam pretio, jam mole, volumina terrent,
Copia mole nucis multiplicata juvet.

ARTIGO
EXTRAHIDO DAS ACTAS
DA
ACADEMIA REAL DAS SCIENCIAS

Da Sessaõ de 5 de Outubro de 1796.

Determina a Academia Real das Sciencias, que as Taboadas de J. H. Lambert *para servir de Supplemento ás* Taboadas Logarithmicas e Trigonometricas, *as quaes lhe foraõ apresentadas por Antonio Felkel com a Traducçaõ Latina da sua Introducçaõ e explicações, sejaõ impressas á custa da Sociedade, e debaixo do seu previlegio. Em fé do que assignei a presente Certidaõ. Lisboa 3 de Abril de 1798.*

FRANCISCO DE BORJA GARÇAÕ STOCKLER
Secretario.

PRÆFATIO INTERPRETIS.

IMmortalis J. H. *Lamberti* memoria per orbem litteratum vulgatiſſima, gentibus in extrema Occidentis ora ſitis pridem innotuerat ex verſionibus diverſorum ejus Operum Gallicis. Unum tamen eorum magis illuſtre operam fefellit Bibliopolarum textu ſuo Germanico præmiſſo; nempe: *Supplementa Tabularum Logarithmicarum* &c. Quod cum primariis Mathematum Cultoribus Regiæ Academiæ Scientiarum Oliſiponenſis innoteſceret, non dubitaverunt, Rempublicam litteratam hac acceſſione amplificare, dando mihi in commiſſis, ut verſionem illis propoſitam continuatam uſui publico aptarem.

Quam provinciam tanto majori propenſione in me ſuſcepi ob perſonalem erga cl. hunc Virum affectionem, qui me poſtremis vitæ ſuæ annis litterarum ſuarum commercio honoravit; quamvis præmatura morte abreptus laborum ejus conſilio ſuſceptorum triumphum videre non potuerit.

Interea conſecutus eam conatuum meorum palmam, quæ in fine Tom. V. *Commercii litterarii Lambertini* publicam meruit lucem, non deſtiti proſequi quædam objecta illius votis expetita ac conſiliis accommodata; quæ proinde mihi jus quoddam primarium vindicant, in aliquas hujus Operis partes mutandas, amplificandas aut ſubſtituendas.

Quo tamen loco habenda ſint jura ac merita, quibus in arenam tantis Heroibus illuſtratam deſcendi, brevis laborum meorum perluſtratio extra dubium ponere debet. Non repetam hic, quæ dicto loco de ratione ſtudiorum meorum mathematicorum referuntur. Ne tamen cœco quodam impetu affectaſſe videar jura ab aliis quæſita, breviter referam, quæ ſtratis his viis conſecuta ſunt, contentus

tus limitibus Operis, cujus *notitiam præviam* gratiſſimam fore judicavi ſcientiarum mathematicarum Cultoribus; miſſis aliis.

Tardum ſtudiorum meorum mathematicorum initium anno ætatis 35, et quædam memorandi ac imitandi difficultas longe a conatibus meis removerant ſpem, cum magnis ingeniis de principatu contendendi in ſublimioribus ac methodicis hujus ſcientiæ gradibus. Quare contractis velis, ſecutus naturalem quandam inclinationem propriis armis contendendi, inhæſi ſubſidiis quibusdam pro uſu aut delectamento deſideratis, ductus tamen judicio (ne dicam præjudicio): *Ab aliis infecta ab eorum conſiliis ac methodis non eſſe repetenda*; præſertim ubi ad ſumma enitendum eſt, uſus Proverbio: *Aut Cæſar aut nihil*; propriis itaque viis ac nervis nitendum, ut *maximum* quidquam aut obtineatur, aut omnino omittatur.

Igitur perſuaſus, non paucas *leges relativas* numerorum formulis ſolutariis hucusque inacceſſas, virorumque veritatibus ſublimioribus diſtentorum conatibus intactas, numerorum homogeneorum juxta ſe poſitione, elementaribus adeo conatibus reddi poſſe pervias; formulis communibus haud anxie quæſitis, numerorum immenſam rimatus ſum congeriem.

Quo intuitu Cl. L. *Euler* illuſtrem materiam mihi ſuggeſſit in ſuæ *Algebræ Lundi* anno 1768 impreſſæ principio, ubi difficultatum meminit *Factores* magnorum numerorum evolvendi. Extemplo miſſis libris tardisque Scholaſticorum viis ad *Tabulas Factorum* conſuetudine majores conſtruendas me compoſui, confecto paucis diebus inſtrumento, cujus ope me victorem omnium difficultatum et Computatorum quotcunque æmulantium fore non dubitavi; baſimque impreſſam pro aliquot millionibus procuravi. Accidit hoc Octobri 1775, tempore ſcilicet feriarum.

Obtentis ſubinde *Supplementis* hiſce Lambertinis mirum in modum confirmatus ſum in hoc propoſito, lecto fine Introductionis ſuæ; litterarumque commercium inivi cum Viro clariſſimo.

Quo in negotio ne conamina aliorum unita, aut deliberationes jam ſuperfluæ moram aut præventionem cauſarent,

rent, oppreſſi omnes, abſolutis una manu duabus millionibus ſpatio 16 menſium, expoſitisque præter conſuetudinem aliorum omnibus cujusvis numeri Factoribus; ſubminiſtrante pro typo, ſine mora incepto impenſas, Imperatore Joſepho II.

Effectus ſupra omnium fidem fuit, doloque extraneorum centro eruditionis propiorum prævalente deſiſtendum a typo ad 408000 progreſſo, reconditis Tabulis in ærario Principis.

Cognita tandem methodi meæ præſtantia anno 1784 a diverſis Academicis extraneis præprimis *Berolinenſibus*, concurrentibusque in partem Operis reformati (nomine: *Tabulæ Factorum redivivæ*) nec recepto primo Originali ad hunc finem neceſſario, anno 1785 computavi pro ſecunda vice, ſpatio temporis anguſtiore *Tabulas Factorum* uſque ad ſeptuplum impreſſarum, ſeu ad limitem 2,856.000. Et hoc intuitu certum eſt, me prope 5 Millionum computatarum auctorem extitiſſe.

Verum quantum ego ſenſi opem Tabularum ad limites tam remotos progredientium, tantum territus fui ab incommodis tanti voluminis, et a manifeſta impoſſibilitate hoc typis vulgandi. Quare propoſitum integras decem Milliones finiendi ſemper dilatum manſit. Depoſito interim, anno 1791 vocatus et abiens Olifiponem, tanto pignore in manibus Mathematicorum Pragenſium, tanto magis ægre tuli jacturam vigiliarum ſecundarum.

Senſeram hoc incommodum jam ante ſecunda molimina; quare omni contentione adlaboravi, ut conderem opus quoddam portatile, cujus ope minimo temporis diſpendio evolvi poſſent Diviſores numerorum non impreſſorum. Verum diverſis tentaminibus jam in molem, jam in operam divergentibus, prætuli onus Tabularum completarum. Urgente vero jam tertia vice neceſſitate, nodum tandem feliciter extricavi feriis autumnalibus anno 1793, et menſibus ſubſequentibus, conſtructis 15 baſibus in tot foliis, quarum ope evolvuntur Factores omnium numerorum infra 24 Milliones, Factoribus tamen minimis non excedentibus 400.

Verum haud pridem finivi methodum extendendi Factores

tores eodem ſpatio folii ultra 1000; et Tubulas ultra 100 Milliones, aucto baſium numero ad folia 65; reſeratis quolibet folio Factoribus numerorum 1,536,000.

Talibus ſubſidiis armatus progredi potui ad alias inquiſitiones extraordinarias; quarum præcipuæ erant *Series Fractionum decimalium* (mihi potius *n* malium) pertractatarum ab Academicis Berolinenſibus, aliisque illuſtribus Mathematicis temporum antiquorum, in *Memorialibus* de 1771; quas primum cognovi ex Cl. *Hindenburgi Nova Methodo indagandi Proprietates numerorum æquali lege progredientium ope Numerationis aut Dimenſionis. Lipſiæ* 1776.

Verum aſpernatus nomen ſyſtematis *Decimalis* et cujuscumque *particularis*, refugiendum putavi ad ſyſtema *indefinitum* ſeu *univerſale*; niſi pridem inventis denuo inſudare congruum videretur.

Quare conſtructa quadam *Arithmetica univerſali in numeris*, (adjecta jam tum anno 1778 in titulo intentione ſpeciali: *Ad inveniendas diverſas leges, proprietates et arcana numerorum*) diverſa detexi de ſeriebus etiam decimalibus antea non obſervata, viamque oſtendi: *Fractiones periodicas cujuscumque ſyſtematis immediate transferendi in ſyſtema quodcumque diverſum.* Quam materiam Societas Eruditorum Pragenſium, tamquam inventionem prorſus novam ſuis inſeruit Tractatibus anno 1785, præmio mihi oblato. Opuſculum vero, ſeu Arithmeticam univerſalem pro baſi ſubſtructam alia occaſione imprimendum commendavit. Quod quamvis temporum injuria periverit, reſurget propediem adæquatius, ubi opportunum fuerit.

Verſatis hac occaſione denuo in omnes partes *legibus periodicis Fractionum*, non ſatis congruum viſum eſt intueuti ſeriem Quotorum articulatim ſubſequentium, in qua eadem ſigna temere quodammodo ſparſa, ſine diſtinctione notabili toties fere recurrunt, quoties Denominator ſyſtematis (nobis 10) continetur in Diviſore ſuo, ſeu duce ſeriei. (Sic v. g. in ſerie de 97 quodvis ſignum decimale numerorum fere decies recurrat neceſſe eſt.).

Quare converſis ſtudiis ad leges tandem deventum eſt, ex unica ſerie completa dati numeri primo intuitu, ac ſine

ſine omni confuſione deducendi quamvis ſeriem ſeu completam ſive incompletam cujusque alius numeri in ſyſtema vocati. Quare *Series*, ſeu *Periodos Syſtematum* compellare placuit.

Quo in negotio nequis jam porro operam perdat, aſſignata et computata ſunt pro omnibus numeris primis ultra 1000 Syſtemata Denominatoris minimi completam ſeriem producentia, a quibus omnia reliqua dependent. Simili prorſus ratione deciſum eſt de legibus Serierum numerorum compoſitorum ac potentiarum plurimum diverſis ab illis, et inter ſe.

Horum ſpeciminum, præter dicta, vix aliqua fragmenta in aliorum manus devenerunt, nec jam, ut diſſoluta catenæ membra, defectu ſubſidiorum ſubſequentium majoris emolumenti, in præſentia hujus operis quidquam valere poſſunt. Quare ſponte ſua ad præſentem fontem confluunt, lucem ſibi mutuo ſpargentia.

Ac proinde fragmenta antea multum voluminoſa, nunc vero ad formam compendioſiorem redacta, tanta approbatione accepta in forma ſua primaria, Probatorum ſuorum fidem coronaverunt conſequentiis ſemper majoribus, quarum ſeries inexhauſta videtur. Cujus rei illuſtre exemplum eſt, quod ſequitur.

Exantlatis his laboribus, et legibus ſerierum univerſalibus tam feliciter definitis, facillimus ac lucidiſſimus regreſſus ad Fractiones fuit. Et quia frequentiſſimi ſunt caſus, ubi requiruntur celerrimæ reductiones, comparationes et applicationes qualescunque fractionum tum naturalium, tum artificialium, numerorumque rationes inter ſe; computatæ ſunt Tabulæ Fractionum naturalium omnium, vel quod idem eſt, exponentes rationum quorumque numerorum duorum primorum inter ſe intra limites 1 et $\frac{1}{200}$, vel ſi mavis intra 200 et 1, in decem notis decimalibus, et congeſtæ in ordines, continentes 12205 tales caſus tamquam omnes poſſibiles, cum inſtructione ac ſubſidiis de uſu earum accommodatiſſimo. Cujus rei ſpecimen noluimus detinere appetentibus.

Ne tamen hoc accrementum gravaret primos emptores, contenti fuimus cum quarta parte infra 1 et $\frac{1}{100}$, nomine *Supplementi ſecundi ad Tabulas mathematicas*: ut pluribus oſtendit Inſtructio particularis de uſu hujus ſupplementi.

Verum quantum natura faveat ſubſidiis ex ipſo fonte hauſtis diligentiore harum tabularum inſpectione repertum eſt. Quippe earum ope non ſolum ſeries decimales &c. ad quemvis terminum continuantur facillime immediate, et abſque ullo errandi periculo; verum ipſa adeo Producta et Quota jam immediate jam mediate expreſſa reperiuntur, ut ita cum Logarithmis artificialibus in contentionem venire videantur.

Quid multa? Meſſis uberrima, maturrima, prorſusque nova per incultum quemdam numerorum campum diffuſa ſe offert ſcientiarum mathematicarum cultoribus. Ex fragmentis recenſitis rite ordinatis itaque conſurget (immo jam confectum, typoque accommodatum eſt, deficiente ſolum introductione, partiumque quarumdam nexu) Opus quoddam integrale, quod *ordiens ab evolutione Factorum numerorum* infra 24 (aut omnino 100) Milliones tranſit ad *Arithmeticam univerſalem tamquam baſim*, dominans *Diviſoribus periodicis* ratione potente, efficaci ac evidente; Inde a *Traductione Periodorum ſpecialium* inter ſe ad *leges periodicas univerſales*, ſine reſtrictione ad ſyſtema ſpeciale: Legibusque periodicis ita ſtabilitis redit ad *valores quantitatum numericarum* tum *reſpectivos*, tum *abſolutos*; ſternens viam ad *Quota* et *Producta* ex ipſis numerorum viſceribus prodeuntia &c.

Celerrimus horum conaminum progreſſus, et continuationis facilitas; paſſibus jam ex omni parte definitis ac dimenſis, ſecundum præ ſe tulit emolumentum, quod eſt incredibilis Tabularum accuratio, quæ rariſſime obtinetur in tabulis congeſtis a diverſis computatoribus, aut temporum ac locorum viciſſitudinibus diſtractis.

Sed ne pluribus perſequar commoda, quorum copia immenſa videtur, ſatis erit, perruptis quodammodo numerorum repagulis hic pandi divitias novas ab indigeſtis numerorum maſſis hactenus inſeparabiles.

Quo in negotio non parum debetur benignæ attentioni et generoſitati R. Academiæ Scientiarum ſuperius celebratæ, præ primis vero quibusdam Mathematicis illius membris, qui collatis ad illius conſummationem ſubſidiis, nullo partium propriique commodi ſtudio retenti animad-

ver-

verſionibus perſpicaciſſimis operis ad finem ſuum conformitatem promoverunt.

Totum ,hoc Opus , niſi ejus continuatio tam facilis quam infallibilis votis majoribus reſponderit , cum ipſa ampliandi methodo tribus Alphabetis in folio comprehendi poterit.

Quibus ita conſtitutis , ſperamus a Viris potentibus , lucem mathematicam ſemper majorem anhelantibus proviſum iri , ut venam tam uberem proprietatum numericarum recentiſſime apertam quam primum publice promanare faciant.

Sed ~~jam~~ redeo ad ſcopum mihi propoſitum reddens textum tanti Viri abſque ulla mutatione , ut innoteſcat tanto loculentius , quo fundamento nitantur mutationes a me factæ in partibus quibusdam Operis , quæ fere redeunt ad Factores omnes omiſſo ſolum maximo expoſitos , et quædam typi compendia , reſectis ſignis numerorum iterato recurrentibus. Reliqua ſparſis ſub litteris Græcis Annotationibus comprehendi ; ut temporum commoda ſuis locis inſerta lectione ſucceſſiva tanto penitius colligi poſſint. Siquam hac ratione præſtitero ſatisfactionem Scientiarum Mathematicarum Cultoribus , acquieſcam ; ſpe fretus laborum meorum inperfectiones ab omnibus excuſatum iri , qui aut ſtudiorum meorum impedimenta norunt , aut partem conſiderant , in qua tot annis quodammodo primus ſpeculator extiti , quibusdam moliminibus haud parum extenſis terminum poſiturus.

Latinitatis ſplendorem minus anxie quæſivi , quam genuinum Auctoris ſenſum in Opere Euclideo. Data tamen opera traduxi Titulum alius Operis Germanici ejusdem Auctoris , aliquoties allegati : *Beitræge zur Mathematik* &c. per nomen *Additamentorum ad Matheſim* , quod idem magis proprie redderetur ~~per~~ *Supplementa* ; niſi periculum foret *Opuſculum* præſens cum altero confundendi.

Denique ne typus præſentis partis retardetur , reſervamus quaſdam adverſiones pro Introductione Supplementi ſecundi ſubjiciendas.

PRÆFATIO AUCTORIS.

QUIA plurima, quæ de præſente Tabularum Collectione mihi dicenda eſſent, in Introductione ſpeciali pertracto; ſupereſt admonere, me in gratiam Extraneorum, in quorum manus devenient, Inſcriptionem Tabularum Latino Idiomate expreſſiſſe. Hæ enim Inſcriptiones illis ſufficere poſſunt ad cognoſcendum finem et uſum; etiamſi propterea Inſtructio Germanica non ſit futura ſuperflua. Cæterum hæc Collectio ſyſtema quoddam format, quod perfectius formaſſem, ſi mihi adhibitis omnibus memoriæ ſubſidiis, omnia in mentem veniſſent.

Interea nonnullæ Tabulæ, v. g. illæ de Polygonis et Corporibus regularibus aliæque data opera omiſſæ ſunt. Aliæ, v. g. Tabula de Triangulis ſphæricis, non adhuc videbantur matura ad edendum.

Pari ratione etiam tales Tabulas, quæ ad ſubſidium calculi integralis ſervire poſſent, diſtuli.

Hæc omnia, præter illa, quæ porro in mentem venerint, aut etiam a Mathematicæ Cultoribus communicata aut propoſita fuerint, ad ulteriora *Supplementa* occaſionem dare poterunt.

Hoc modo adhuc durante typo adjeci Tabulam XLIV, quæ in multis caſibus uſui eſſe poterit. Pro accuratione typi omnis diligentia adhibita fuit.

INDEX

Tabularum, et Articulorum in Præfatione correſpondentium.

Quædam Annotationes Speciales in Introductione.

INTRODUCTIO.

HOC nomine declarabo Titulum, et occaſionem Operis, aliosque intentus ad diſpoſitionem Operis pertinentes.

Qui Matheſim non ſolum addiſcunt, verum etiam applicant, experientia ſciunt, eſſe numeros, rationes, formulas, et computationes, quæ ideo, quod ſæpius occurrunt, ſemel pro ſemper confici, et conſervari merentur; ut operæ parcatur, ea multoties inveniendi, et computandi de novo. Hæc eſt ratio, quod in omnibus Matheſeos partibus, quidquid in Tabulas redigi potuit, Tabulis exhibeatur. Pythagoras cum Abaco ſuo initium fecit; et exinde usque in hodiernum diem numerus talium Tabularum ita increvit, ut ſimul ſumptæ complures Foliantes impleturæ eſſent; neque dubium eſt, illas porro auctum iri.

Interim dividi poſſunt in duas claſſes generales. In primam claſſem referendæ ſunt eæ Tabulæ, *quæ ſerviunt ſingulis Matheſeos applicatæ partibus ſeorſim.* Inter illas Tabulæ Aſtronomicæ quaſi unicæ ſunt, quæ ſeorſim eduntur, reliquæ in iis Scientiarum ſpecialium Tractatibus occurrere ſolent, ad quas referuntur. Prætereo hic ſingulas, quia ſolum de altera claſſe generali tractaturus ſum. Hæc comprehendit eas Tabulas, quæ ſine diſcrimine in omnibus Mathematices partibus uſum habent, et ad *Matheſim puram* referri debent.

Harum notiſſimæ ſunt: Tabulæ numerorum quadratorum et cubicorum, et præter illas præprimis Logarithmicæ et Trigonometricæ.

Numeri quadrati inveniuntur in *Ludolphi* Tetragonometria ab 1 usque 100000 ſatis accurati. Numeros quadratos et cubicos ab 1 usque 12000 exhibuit *Buchnerus*, ſed plenos errorum. Tabularum Logarithmicarum et Trigonometricarum *Shervinus* et *Gardiner* tam accuratione quam commoditate tradiderunt præſtantiſſimas.

Præter iſtas *Joncourtius* edidit Tabulam numerorum Trigonalium, quorum utilitas haud ampla eſt. Meliores utilioresque forent eæ Tabulæ, quæ numeros figuratos in genere ad ampliores limites exhiberent.

Hæ tabulæ æſtimantur præprimis commoditatis cauſa, quia numeros ſæpius computandos jam factos exhibent. Reſtat autem Tabula, ubi uſum habet, multo magis neceſſaria. Hæc eſt *Tabula Diviſorum ſeu Factorum numerorum.* Non habetur adhuc regula generalis dignoſcendi, an numerus propoſitus primus ſit, nec ne. Quoties itaque neceſſe eſt, numerum datum in ſuos Diviſores reſolvere, gratiſſimum eſt, eum evolvere in Tabula, ejusque Diviſores exſcribere poſſe.

Non repetam hic, quod in ſecunda Parte *Additamentorum ad Matheſim* hac de re protuli. Monſtravi ibi, quam compendioſe tales Tabulæ diſponi poſſint, proponens in latere unius folii Tabulam Factorum ab 1 usque 10200. Proxima ſequela fuit, hac ratione Foliantem de non amplius, quam 50 plagulis exhibere poſſe Diviſores omnium numerorum per 2, 3, 5 non diviſibilium ab 1 usque 1,020.000 α) Sciebam tum de Tabulis *Pellii* ſollum hoc, quod *Peëtius* in ſua Arithmetica refert; et contentus Computatione *Poëtii*, ei ſolum dedi diſpoſitionem compendiſiorem. Oſtendi poſtea Tabulam ante typum D. *de la Grange*; qui pariter nihil præterea ſciens, deſideravit typos hujus Tabulæ ad ſuos correſpondentes tranſmittendos.

Retardato interea typo D. *de la Grange* paulo diligentius inquirens invenit Tabulam *Pellii* usque ad 100.000 ac proinde decies extenſiorem, quam *Poëtii* et *Anjemæ*, contentam tam in *Dictionario Encyclopedico*, quam in Lexico *Harriſii* Scientiarum et Artium. Et evolvens amplius opera *Walliſii*, inveni ibi errores typi 30, quos *Walliſius* in Tabula *Poëtii* annotaverat, in *Pellii* annotatis omiſſos. *Walliſius* credidit, has Tabulas jam penitus eſſe emendatas. Haud certus ſum, an W*alliſius* omnes numeros denuo computaverit; neque adeo, an ambo hæc Lexica contineant omnes has correctiones.

Inveniebantur in fine *Algebræ Pellianæ*, quæ referente Walliſio *Thomas Brankerus* annuente *Pellio* ex Germanico in Gallicum traduxit et 1668 edidit Londini. Hoc opus numquam vidi. Diſpoſita proinde Tabula ſicut exiſtit in Dictionario Encyclopedico in dictam formam compendioſam, inveni præter errores a W*alliſio* expoſitos adhuc fere 60 alios, propter ordinem mutatum facile apparentes. Plurimi conſiſtebant in eo, quod nota numeri 3 permutata eſſet cum littera *p*, quæ numerum primum indicabat; et hoc poterat provenire de Manuſcripto minus legibili. Nam et in Dictionario W*alliſii* occurrunt ſimiles permutationes. β)

α) Ignarus horum conſiliorum (ordine enim duobus fere menſibus ſtabilito, horum Supplementorum copia mihi primum facta eſt &c.) cum A. 1775. m. Octobri moleſtas Factores exponendi vias pertæſus, compendia calculi evidenter breviſſima inquirerem: non ſolum inveni formam *omnes diviſores numerorum excepto maximo*, ab 1 usque 1,008.000 in ſpatio 42 plagularum repræſentandi, verum etiam reipſa opus ſpatio 16 menſium usque ad 2,016.000 confeci, annoque 1785 (animatus applauſu diverſorum Academicorum) ad 5,000.000 usque continuavi. Vide Commerc. litter. Germ. Lamberti. Tom. V. Conſilium annis ſubſequentibus (1793—94) feliciter mutatum Vid. Præfat. interpret. et infra.

β) Quam arduum ſit, Opus numericum omni errore liberum ſiſtere, apparet ex ipſa hac Diviſorum tabula, in qua tanta tanti viri diligen-

Pel-

Pellius interea contentus fuit, cujusque numeri compoſiti minimum Diviſorem exponere. Quo ſi dividatur numerus, quotus porro evolvendus eſt, ut appareat, an numerus porro diviſibilis ſit, nec ne. Et hoc intuitu ejus Tabula minus abſoluta eſt, quam ea, cujus in II. Parte *Additamentorum* memini; etſi ſolum extendatur uſque ad 10200. Et inſuper difficilius eſt emendare errores typi, quam ubi omnes diviſores exponuntur. γ.

Interea cum *Pellii* Tabulla multo melior ſit quam nulla, ejusque Algebra, *Harriſii* Lexicon in Germania rarum, et *Dictionarium Encyclopedicum* in paucorum manibus habeatur; cumque compendioſa 8vi forma multo commodior ſit; credebam per editionem Tabulæ Pellianæ me Mathematicis rem gratam facturum. Hæc Tabula hic a 100000 usque ad 102000 extenſa eſt. Et pari ratione annexui numeros primos ab 1 usque 101999. Illi ab 1 usque 100999 ex *Krügeri* cogitationibus ſuper Algebram ſumpti ſunt, poſſuntque cum illis in Tabula Pellii comparari. δ.

Krügerus eos acceperat a quodam *Petro Jæger* ſcriptos, qui computatione eorum plurimum meritus eſſe putabatur, contentusque erat promiſſo, fore, ut typo publici uſus fierent. Utilitas earum Tabularum non efficit omnia, quæ de his porro deſiderantur. Et præprimis a tempore inventi calculi Univerſalis et Integralis aliæ requiruntur. Univerſalis finis talium Tabularum eſt, *ut ſemel pro ſemper computetur, quod ſæpius de novo computandum foret; et ut pro omni caſu computetur, quod in futurum pro quovis caſu computatum deſiderabitur.*

Hanc regulam ſequenti ratione ſecutus ſum; Scripſi numeros et formulas, quarum frequentem uſum prævidi, ad paginas albas et folia occurrentia in Tabulis Trigonometricis *Vlacci*; et his non ſufficientibus inſerui folia nova, ſucceſſu temporis porro impleta; deficiente jam ſpatio pro novis, etſi aliquas Tabulas ampliores porro diſtulerim. Tandem decrevi, ex dicta *Pellii* tabula, aliisque ſucceſſive collectis formare quoddam ſyſtema typis vulgandum. Inde liquet, ſine admonitione, titulum: *Supplementum ad Tabulas Logarithmicas et Trigonometricas* eſſe maxime adæquatum, præſertim cum hoc nomine ſemper plura ſubſequi poſſint.

Tabulæ præſentes jam referunt: *Diviſores Numerorum*, *Lo-*

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tia præcavere non potuit, quin adhuc 73 errores tum calculi, tum typi irrepſiſſent. Verum cum (juxta notam α) media mihi ſuppetant ab erroribus omnino libera, dubium nullum eſt, has tabulas ante typum cum diverſis formis collatas, jam nulli erroris ſuſpicioni eſſe poſſe obnoxias.

γ. Status præſentium Tabularum reformatus omnibus poſtulationibus ſatisfacit; correctione accuratiſſima, etiamſi abſit maximus diviſor. Vide etiam inferius §. 3. Nota η.

δ. In præſenti ſubſidiorum abundantia ſuperfluum eſt ad tales reviſiones recurrere.

garithmos, *Rationes Trigonometricas*, *Extractiones Radicum*, *Reſolutiones Æquationum*, *Rationes Serierum infinitarum*, *Interpolationes*, *Computationem aliarum Tabularum* &c. atque ideo talia objecta, quæ verſantibus in ſcientiis mathematicis quam frequentiſſime occurrunt.

Annotavi jam Tom. II. *Additamentorum* ad Matheſim, Tabulas Diviſorum *iterum iterumque de novo computatas*. Hoc veroſimiliter porro ſuccedet. Quilibet enim ſentit neceſſitatem poſſidendi tales Tabulas; et pauciſſimi ſciunt, eas jam ſæpius Typis vulgatas eſſe. Non omnino quæruntur, niſi jam ſciatur, in *Algebra Pellii*, in *Arithmetica Poëtii* cum Algebra parallela, in *Lexico Harriſii*, in *Dictionario Encyclopedico*. Et in tantum *Anjema* unicus eſt, qui tales Tabulas ſeorſim edidit. Interea rationem habeo exiſtimandi, multos, qui emerunt *Algebram Pellii* aut *Poëtii*, eam emiſſe ob Tabulas annexas; ſumptis forſan ſolis Tabulis, neglecto Tractatu Algebrico. Hoc accidiſſe cum cogitationibus *Krügeri* ex pluribus exemplis reſcio. Diverſi Mathematici, quibus Krügerus vix aliquid novi dicere poterat de Algebra, neglectis cogitationibus ſervabant ſolum *numeros primos*. Sic v. g. eos inveni *Hagæ* in celebri licitatione de *König*. Et quamvis eos jam haberem in *Krügero* tamen comparavi denuo cum Tabulis *numerorum quadratorum* et *cubicorum Büchneri*. [ε]

Dixi paulo ante, fore, ut tales tabulæ porro computentur; et hoc certo fiet, niſi tam communes reddantur, ut Tabulæ. Logarithmorum, et Trigonometricæ. Fortaſſe titulus hic electus aliquid contribuere poterit. Saltem illi, qui *Vlacci*, *Wolfii*, *Shervini* et alias Tabulas poſſident, data occaſione quærent: Qualia Supplementa hæ Tabulæ habere poſſunt? Mihi ſaltem hæc interrogatio ſtatim in mentem veniret: An et ego empturus eſſem? Eadem ratione, ut mihi Tabulas diverſi generis Logarithmicas et Geometricas, Ludolphi Tetragonometriam, *Büchneri* numeros Quadratos et Cubicos, *Krügeri* (vel potius ingenui Petri *Jægeri*) numeros primos, et multitudinem Tabularum Aſtronomicarum comparavi.

Cum interea longinquus labor ſit, Tabulas Diviſorum ab 1 usque 102000 denuo computare, requiram Dominos Journaliſtas et alios Auctores; quibus hoc Opuſculum occurrit. Illi agent nempe amore hominum, facientes ſcientiis mathematicis rem gratiſſimam, ſi ad notificationem hujus Opuſculi pro viribus contulerint. Qui-

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[ε] Hæ rationes temporum ſucceſſu evanuerunt; ipſeque *Lambert*, ſi ſuperſtes eſſet, deſideria ſua collaborantium æmulatione non impleta, ſed exceſſu eluſa conteſtari deberet; non tam ſpectato tenore commercij ſui litterarii, ſed multo magis eorum, quæ nomine *Clavis Factorum* in Præfatione J. uberius exponuntur.

cunque enim animum habet, tales tabulas porro computandi, utilius laborabit, hoc, quod hic usque ad 102000 exhibetur, duplo ulterius aut ad decuplum continuando, quam computatum denuo computando. Vere deſiderabile eſt, obtinere Tabulas Factorum usque ad 1.000.000 et amplius, in quibus diviſores immediate evolvantur.

Viro tam indefeſſo ac ſtrenuo promiſi in meis *Additamentis*, ſaltem quod ad me attinet, eamdem immortalitatem, quam *Nepper*, *Briggius*, *Vlaccus*, *Juſt. Byrgius*, *Rheticus*, *Pitiſcus*, *Gardiner*, *Shervin* Tabulis ſuis conſecuti ſunt. Contentus ero diſpoſitione compendioſa ζ) in *Additamentis* propoſita, coactus applicare tempus meum ad alia Propoſita et Diſquiſitiones; et facilius errans in vulgaribus, quam in complicatis calculationibus ultro ſuperſedeo labore calculationum iteratarum. Jam Tabulas collectas ſecundum ordinem perſequar, diſpoſitionem deſcribam, intentum definiam, uſum in genere oſtendam exemplis adductis. Hinc inde Annotationes affigam, quid de argumentis pro baſi aſſumptis porro ſtatui poſſit.

I.

Tabula Diviſorum ab 1 *usque* 102000, *Numerorum per* 2, 3, 5 *non diviſibilium.*

§. I.

DIſpoſitionem hujus Tabulæ jam in Additamentis ad Matheſim Tomo II. deſcripſi. Fundatur in lege, quod omnes numeri per 2, 3, 5 non diviſibiles, diviſi per 30 ſiſtunt 8 diverſa reſidua, (per 300 — 80 &c.) Qua conditione factum, ut quavis pagina duplicata hujus Tabulæ exponerentur 3000 numerori (*i. e.* 800 expoſitæ conditionis F.). Et ſic oſtenditur in fine cujusvis paginæ, quousque ultimus numerus pertingat. Ita pag. 1. ad 3000, 2da ad 6000, 3^{tia} ad 9000 extenditur, et quævis pagina progreditur amplius 3000 numeris.

§. 2. Jam quævis pagina ſecundum duo dimidia ſuperius dividitur in duo quadrata; tertium vero quadratum inferius dividitur in duo dimidia. Super quovis quadrato ponuntur numeri repræſentantes centena; et in ſerie perpendiculari, latere ſiniſtro exhiben-

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ζ) Ex dictis in Nota α). apparet, ignorantiam hujus Diſpoſitionis (ſeu Typi), quæ videri poſſet poſſibilium compendioſiſſima, proprie cauſam extitiſſe Factores exhibendi per Tabulam alius generis, quæ præter compendium Typi, ſumma calculi compendia, cum naturali numerorum ordine ſumma inveniendi ac revidendi facilitate ac certitudine conjungit.

tur decades cum unitatibus adjungendæ dictis centenariis, ad repræſentandum omnes numeros non multiplos de 2; 3; 5.

§. 3. Dato proinde numero per 2, 3, 5 non diviſibili, reſpiciuntur centenarii illius ſuperinſcripti quadratis, et decades cum unitatibus in marginis ſiniſtri ſerie perpendiculari. Et in concurſu ſeriei perpendicularis centenariorum, et lineæ horizontalis decadum cum unitatibus, aut invenitur linea horizontalis, ſi nempe numerus datus eſt primus; aut numerus, qui eſt minimus diviſor numeri dati. [4]

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[4] Ad unienda omnis generis Compendia, ipſius Auctoris poſtremis conſiliis expetita, ut primo intuitu dignoſci poſſit numerus et conditio diviſorum, quos tamen expreſſos non capit ſpatii anguſtia: ita proceſſimus ſervata Auctoris lege:

Omnis numerus diviſibilis aut duos ſolum Diviſores habet, aut plures. Si primum dividatur numerus datus per Factorem ſeu Diviſorem expoſitum, qui minimus eſt; et quotus erit alter confactor jam porro non diviſibilis: quod neminem gravare poteſt. Quodſi vero incertum ſit, an ille Quotus porro diviſibilis ſit, nec ne, pro omni caſu requiritur nova evolutio, quod terque quaterque accidere poteſt, donec appareant omnes diviſores ſimplices. Cui moleſtiæ ut pro ſemper occurratur, pro caſu duorum Factorum contenti fuimus minimo expoſito; ſi vero plures ſint diviſores, itidem expoſito minimo per numeros, majores expreſſimus ita, ut ſpatium numquam deficiat, ſubſtitutis in locum numerorum litteris, quæ immediate jungi poſſunt numeris, ſine permixtione, excluſo ut plurimum maximo Diviſore.

Jam ſi quærantur Diviſores numeri 94367, ejus loco occurrunt ſigna 7 *g h*; qui proinde primo intuitu cognoſcitur eſſe quatuor Diviſorum quorum tres expoſiti ſunt: 7. 13. 17. Litterarum enim valores uno intuitu cognoſcuntur ex præſente Tabula, quæ transſcripta in folium 8^{vi} et affixa ultimæ paginæ Tabularum, absque minima mora exponi, et pro omni caſu ſervire poteſt.

Imterpretatio Litterarum Diviſores repræſentantium.

a, *b*, *c*, *d*, *e* repræſentantes numeros primos 1, 2, 3, 5, 7 numquam occurrunt. Cæteræ ſunt:

$f = 11$
$g = 13$
$h = 17$
$i = 19$
$k = 23$
$l = 29$
$m = 31$
$n = 37$
$o = 41$
$p = 43$
$q = 47$
$r = 53$
$s = 59$
$t = 61$
$u = 67$
$v = 71$
$w = 73$
$x = 79$
$y = 83$
$z = 89$
$A = 97$
$B = 101$
$C = 103$
$D = 107$
$E = 109$
$F = 113$
$G = 127$
$H = 131$
$I = 137$
$K = 139$
$L = 149$
$M = 151$
$N = 157$
$O = 163$
$P = 167$
$Q = 173$

Altiores enim numeri excedentes $\sqrt{\frac{102000}{7}}$ in circumſtantiis expoſitis locum habere non poſſunt.

Jam diviſo dato numero $\frac{94367}{7} = 13481$; et $\frac{13481}{13} = 1037$; tan-

§. 4. Exemplis res clarior fiet: detur numerus 46547. Cum hic numerus cadat intra 42000 et 48000; evolvatur pagina, ubi ponitur infimo loco 48000. Jam quæratur ſuper quadratis numerus 465 centenariorum. Hi 465 reperiuntur in quadrati ſuperioris columnâ ſexta. Tum ſumantur decades cum unitatibus 47 in ſiniſtro margine. Tum progrediendo de centenariis 465 perpendiculariter deorſum, et de 47 horizontaliter dextrorſum, in concurſu amborum invenitur numerus 89 tamquam minimus Diviſor dati numeri 46547. Quo diviſo per 89 invenitur quotus 523. Qui numerus evolutus occurrit pagina prima in quadrato poſteriori infra 5 et de 23 dextrorſum; cujus loco occurrit linea horizontalis —; exquo liquet, numerum 523 eſſe primum; ac proinde numerum 46547 præter numeros 89 et 523 non habere diviſorem.

§. 5. Detur numerus 64067, poſitus intra 63000 et 66000. Quæratur proinde pagina, in cujus fine ponitur 66000; et tum parte poſteriore Quadrati inferioris, infra centena 640, et linea horizontali de 67 collimando invenitur linea —; exquo colligitur, numerum 64067 Diviſore perfecto deſtitui, id eſt, eſſe primum.

§. 6. Propoſito eodem modo numero 77211, invenirentur quidem pagina de 78000 ſuper quadratum inferius centenarii 772; abſentibus tamen decadibus cum unitatibus 11 ex parte ſiniſtra. Jam cum hic numerus in Tabula prorſus non occurrat, colligitur, eum per 2, 3 aut 5 diviſibilem eſſe. Sed manifeſtum eſt, eum neque per 2, neque per 5 eſſe diviſibilem, quia finitur unitate 1. Ac proinde per 3 diviſibilem eſſe oportet. Peracta diviſione, quotus eſt 25737. Hic quotus quæritur pagina 27000, ſed itidem abſens; ex quo apparet, eum porro per 3 eſſe diviſibilem. Peracta diviſione quotus 8579, pagina 9000 evolutus in quadrato inferiore infra 85, et directione de 79 refert 23 ut diviſorem minimum. Diviſo proinde numero 8579 per 23, obtinetur Quotus 373. Et iſte evolutus in pagina prima in Quadrato præcedente perducit ad lineam, tamquam numerum primum (ſeu indiviſibilem), ac proinde ceſſat inquiſitio. θ)

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dem $\frac{1037}{17} = 61$, nobis ſiſtit Factorem maximum 61, loci anguſtia excluſum.

Occurrentibus Potentiis numerorum Exponens adhibetur; qui jam exhaurit omnes numeri Diviſores, jam excludit minorem maximo. Exemplo ſint numeri: $16807 = 7^5$; $57967 = 7^3\ g^2 = 7^3\ 13^2$; et $32851 = 7 i^2. = 7 . 19^2. (13)$. ubi excluditur 13. Quæ omnia conditionibus compendii, cum maximis, quæ locum habere poſſunt, emolumentis conjuncti ſatisfaciunt.

θ Quam commode hæ ambages per præſentem operis diſpoſitionem evitentur, ex dictis in Nota (4) manifeſtum eſt.

§. 7. Allegavi poſtremum hoc exemplum ideo, quia non ſemper reminiſcimur illico, priusquam evolvatur numerus in Tabulis, primo inquirendum eſſe, utrum per 2, 3, 5, et præprimis per 3 diviſibilis ſit? Poteſt tamen, ut patet ex exemplo adducto, examen omitti. Tum vero quando in Tabulis non invenitur numerus propoſitus, reminiſcendum eſt, diviſionem per 2, 3 aut 5 eſſe inſtituendam. Nam præter numeros pares etiam illi, qui cum 5 terminantur, omnesque per 3 diviſibiles, Tabula excluſi ſunt.

§. 8. Quia invento Diviſore ſemper opportunum eſt, Diviſionem reipſa peragere, adjunxi, exemplo *Pellii* Tabulam multiplicatoriam, quæ repræſentat quemque Diviſorem in Tabulis occurrentem multiplicatum cum 1, 2, 3, ... 9. Hæc Tabula itidem ſervire poteſt ad quaſcunque alias Diviſiones, ubi diviſor aut eſt numerus primus intra 2 et 313, (amplificata usque ad 401, quia ſervire poteſt ad novas baſes conſtruendas, reſtrictas ad folium ſimplex) aut numerus in tales numeros primos reſolubilis. Sic v. g. dato numero 71677, invenitur pagina de 72000 in poſteriore quadrato infra 716 et directione de 77 ejus diviſor minimus 229. Jam evoluto in Tabula multiplicatoria numero 229, mutatur Diviſio peragenda in meram deſcriptionem et ſubtractionem. Jam ſi dividendum eſſet per numerum 71677, pari facilitate initio per 229, tum vero Quotus per 313 dividi poſſet; præprimis ubi declinando fractiones ſufficit proprium Quotum exprimere partibus decimalibus.

$$
\begin{array}{r|r|l}
229 & 71677 & 313 \\
 & 687 & \\
\hline
 & 297 & \\
 & 229 & \\
\hline
 & 687 & \\
 & 687 & \\
\hline
 & 0 &
\end{array}
$$

Eſt proinde numerus
$71677 = 229 \,.\, 313.$

Reſpectu Multiplicationis æqualia compendia locum habere poſſunt. Interim fatendum eſt, utilius futurum fuiſſe, ſi placuiſſet *Pellio*, omnes cujuſque numeri Diviſores exponere. 1) Cum vero nonniſi minimum expoſuerit, neceſſeque ſit tandem reliquos dividendo et repetita evolutione reperire; uſus Tabulæ potiſſimum reſtringitur ad eos caſus, ubi neceſſe eſt invenire Diviſores ſine reſpectu ad majorem aut minorem temporis jacturam. Sunt interim tales caſus quam plurimi.

§. 9. Sic V. g. incidendo in calculatione in formulam . . . $\sqrt{(79^2 + 174^2)}$; facile invenitur $79^2 + 174^2 = 36517$. Ac proinde $\sqrt{(79^2 + 174^2)} = \sqrt{36517}$. Qui numerus quidem non eſt

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1) Ex his dictis apparet, ***Lambertum*** ſola neceſſitate permotum uno Diviſore expoſito contentum fuiſſe; ac proinde reformationem nota γ. expoſitam illius votis quam maxime conſentaneam eſſe; præſertim cum modus hoc efficiendi compendio propoſito prorſus nihil officiat.

quadratus, quia ultima ejus nota eſt 7. Interea invenitur 36517 = 13.53.53; ac proinde $\sqrt{(79^2+174^2)} = 53\sqrt{13}$. Quæ formula multo ſimplicior eſt præcedente. Atque in calculo univerſali pridem more receptum eſt, formulas, quæ ſimplicius reddi poſſunt, reipſa ad minimam expreſſionem reducere.

§. 10. Eodem modo ratio $\sqrt{15463} : \sqrt{22743}$ non videtur rationalis. Cum vero 15463 = 47.47.7 et
22743 = 3.3.19.19.7
inveniatur, apparet eſſe $\sqrt{15463} : \sqrt{22743} = 47 : 57$. Unde liquet operæ pretium eſſe, in talibus caſibus evolvere Factores et facere tentamen.

§. 11. Tales caſus et plures ſimiles in calculo occurrunt quam frequentiſſime; præprimis, ubi Fractiones addendæ, ſubtrahendæ, multiplicandæ aut dividendæ proponuntur, aut ad eandem denominationem reducendæ ſunt. In doctrina combinationum ac permutationum, atque inde in calculo veriſimilitudinis itidem occurrunt caſus, ubi numeri reſolvi debent in Factores ſuos. Contingunt vero etiam tum, ubi calculatur per ſeries infinitas, aut ubi illæ convertuntur, aut aliæ mutationes cum illis fiunt; aut ubi leges progreſſionis coefficientium inquiruntur &c. præcipue ubi neceſſe eſt per inductiones viam ſternere.

§. 12. Jam etiamſi hæc Tabula 102000 non excedat, tamen habetur multitudo numerorum majorum, qui ad hos reduci poſſunt. Sic v. g., omnes numeri pares a 202000 uſque 204000 in Tabula comprehendi recte dicuntur; quippe qui diviſi per 2 intra hanc Tabulam recidunt. Idem valet de Triplis infra 306000; et in genere de omnibus numeris majoribus, qui diviſi per 4, 5, 6, 7, 8, 9 &c. Siſtunt Quotum integrum minorem 102000.

Ponatur, v. g. tempus de uno Novilunii uſque ad alterum eſſe = 29 dies, 12 hor. 44′ 3″. 12‴ ſeu 153086592 Tertiorum. Hic numerus ſepties dividi poteſt per 2, et ſic obtinetur.

Porro ultimum dimidium diviſibile eſt per 3. reddens quotum . . . .

Et hoc ſubtriplum porro diviſibili eſt per 29, quo facto obtinetur.

153086592
76543296
38271648
19135824
9567912
4783956
2391978
3) 1195989
29) 398663
13747

Evoluto porro hoc numero in Tabulis, invenitur 59 minimus ejus diviſor; peractaque diviſione obtinetur Quotus 233. Ac proinde eſt numerus 153086592 = 2.2.2.2.2.2.2.3.29.59.233.

Jam

Jam cum hora habeat 216000 minuta tertia, et . . . ; $216000 = 2.2.2.2.2.2.3.3.3.5.5.5$; obtinetur

$$153086592 : 216000 = 2.29.59.233 : 3.3.5.5.5$$
$$= 58.59.233 : 5.15.15.$$

Unde liquet, in horologio horas indicante applicari poſſe rotam gyrantem accurate 29 diebus, 14 horis, $44'$, $3''$, $12'''$.

II.

Tabula Numerorum primorum, ab 1 usque 102000.

§. 13. Quamvis numeri primi ab 1 usque 102000 jam contineantur in Tabula I. Diviſorum Numerorum; tamen opportunum videbatur, eos ſeorſim in una ſerie imprimi; præprimis cum non ſint de *Pellio*, ſed de *Petro Jæger*, ac proinde ſervire poſſint ad accurationem Tabularum comprobandam. κ) Revera non apparet utilitas talis Elenchi. Interea *Petrus Jæger* hos numeros primos pluris feciſſe videtur, quam ipſos numeros diviſibiles; quia non hos ſed illos ad *Krugerum* tranſmiſit. Sic quoque *Poëtius* initio edere volebat in opere ſuperius citato ſic dictum *Triangulum Primorum*. Ejus tamen intentio ea fuiſſe videtur, ut numeris in ſuos factores ſimplices reſolutis illico videret, an Factores inventi vere eſſent ſimplices, id eſt, primi. Num vero in Vocabulo *Triangulum* recondatur ſpeciale quoddam myſterium numerorum primorum, hucuſque haud ſcio. Numeri enim primi haud quidquam continere videntur figuræ triangulari analogum.

§. 14. Interea alia quæſivi media, utendi numeris primis in exquirendis numerorum Diviſoribus; et quidem facilius et brevius, quam obviis pleriſque methodis. Nam ad inveniendos numeri Diviſores ut plurimum datur inſtructio, ut inſtituatur Diviſio ſecundum ordinem numerorum primorum infra radicem quadratam dati Numeri. Hoc intuitu *Petrus Jæger* ſiſtendo numeros primos uſque 101000, ſubſidia dedit, ut eorum ope omnes numeri infra 10.201.000.000 examinari poſſint, an habeant Diviſores integros nec ne. Verum cum numeris majoribus nonnunquam plura millia

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κ) Ratio hæc Elenchum numerorum primorum ſeorſim imprimendi prorſus evanuit; tum quia præſens Tabularum reformatio omnem erroris ſuſpicionem removit, tum quia ipſe *Lambert* utilitatem illius præſenti §. in dubium vocavit. Ratio tertia eſſe poteſt, quia ſpatium 45 paginarum objectis quibuſdam probatæ utilitatis aſſignari poteſt.

tentaminum facienda forent, ad experiendum, nullum eorum eſſe Diviſorem perfectum.

§. 15. Hinc quærebatur methodus compendioſior excludendi numeros primos, qui non ſunt Diviſores dati. Hoc intuitu, aliiſque intentibus Theoriam numerorum diligentius indagavi. Quo in negotio quidem ſolum inveni fragmenta quædam ſine magna ſpe; ea brevi in ſyſtema coalitura. *Euclides* pauca, *Fermates* ſolitaria plerumque abrupta indemonſtrata fragmenta, *Eulerus* ſingulas partes a captu Tyronum nimium remotas continet.

§. 16. *Numerus primus* nomen nactus eſt, quia per alterum diviſibilis non eſt. Sic diſtinguitur a diviſibilibus, ut differentia apparere poſſet manifeſta, et inde quilibet numerus primus videatur per ſe notus. Sed multum deeſt ad hoc. Noſtrum numerandi ſyſtema ita quidem compoſitum eſt, ut numeris pares et impares primo intuitu dignoſcatur; verum ad dignoſcendos numeros primos vix aliquid præſtat. Et etiamſi inveniretur aliquod numerandi ſyſtema ad hunc finem appoſitum, tamen ſemper reduci debet ad ſyſtema conſuetum, cui adhæret habilitas noſtra practica. λ)

§. 17. Iterea ex notione numerorum primorum diverſæ leges deductæ ſunt. Sic v. g. *Cum numeri primi non habeant Diviſorem, tanto minus plures numeri primi habebunt Diviſorem communem.* Item: *Numerus primus non dividit niſi ſua multipla; et quilibet numerus diviſibilis multiplum eſt primorum.* Porro: *Duo aut plures numeri ſolum habent Diviſorem communem, in quantum multipla ſunt eorumdem primorum.*

Hæ et ſimiles leges, in quantum pertingunt, uſum habent bonum. Verum proinde non præbent criterium aliquod numerorum primorum. Interea tamen perſequar quaſdam leges hujus generis.

§. 18. *Si ſumma duorum numerorum ſit primus, non habent diviſorem communem.* Alias enim ipſa ſumma eodem numero diviſibilis eſſet.

§. 19. Hinc *numerus primus diſperſus in duas partes ſemper refert tales duos numeros, qui non habent diviſorem communem.* Et vice

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λ) Vix probabile eſt, aliquod numerandi ſyſtema ſpeciale ampla pro hoc intentu oblatutum ſubſidia. Vix enim aliquod ſyſtema ſpeciale aliud Diviſorum criterium continebit, quam pro numeris ejus Denominatori proximis. Ponatur Denominator qualiſcunque ſyſtematis $= n$; cognoſcentur in illo Diviſores n, $n - 1$, $n + 1$, eorumque ſubdiviſores. Sic in ſyſtemate denominatoris 14 cognoſcentur numeri diviſibiles per 13, 14, 15, item 2, 3, 5, 7, eodem modo, ut in ſyſtemate decadico diviſibiles per 9, 10,, 11: et cum his 2, 3, 5. Diviſores ab his terminis magis remoti altiores agunt radices, quæ ſolum ope ſyſtematum periodicorum eruuntur. *Vide Præfat. Int.*

verſa : *Numerus diviſibilis ſemper diverſis modis dividi poteſt in duas partes, habentes Diviſorem communem.*

§. 20. *Si differentia duorum numerorum ſit primus, aut ambo ſunt Multipla illius, aut non habent Diviſorem communem.* Ponatur enim præterea tertium eſſe diviſorem; tum ille metiens ambos numeros, metietur quoque Differentiam, ac proinde numerum primum; quod implicat, &c.

§. 21. *Si datus numerus ſubtrahatur a quibuſcumque numeris primis, nullus Reſiduorum diviſor eſt numeri dati, et nullus eorum habet cum illo Diviſorem communem.* Reſiduus enim numerus, ſeu hic diviſor communis deberet quoque dividere numerum primum. Quod abſurdum eſt.

§. 22. *Subductis a numero dato omnibus numeris primis minoribus, qui non ſunt ejus Diviſores; Reſidua itidem neque diviſores ſunt illius numeri, neque diviſorem communem habent cum illo.* Hoc igitur per ſe jam valet de omnibus numeris primis majoribus dimidio dati numeri. Niſi ille diviſibilis ſit per 2, valet aſſertio de omnibus numeris primis non majoribus tertia parte numeri. Niſi pariter diviſibilis ſit per 3, valet Propoſitio de omnibus primis majoribus quinta numeri parte &c. In iiſdem caſibus valet aſſertio, ſumptis duplis, triplis, quintuplis numerorum primotum.

§. 23. *Hac rationem igitur ſola ſubtractione multi numeri excludi poſſunt, qui non ſunt Diviſores numeri dati.* Detur v. g. numerus 4606; ſummatur differentia illius a numeris proxime majoribus et minoribus.

4606	
4621	15 = 3.5
4637	31
4639	33 = 3.11
4643	37
4649	43
4651	45 = 3.3.5
4657	51 = 3.17
4663	57 = 3.19
4673	67
4679	73
&c.	&c.

4606	
4603	3
4597	9 = 3.3
4591	15 = 3.5
4583	23
4567	39 = 3.13
4561	45 = 3.3.5
4549	57 = 3.19
4547	59
4523	83
4519	87 = 3.29
4517	89
4513	93 = 3.31
4507	99 = 3.3.11.
&c.	&c.

Sic ſola ſubtractione invenitur, numerum 4606 non eſſe diviſibilem per numeros primos: 3, 5, 11, 13, 17, 19, 23, 29, 31, 37, 43, 67 &c., ac proinde ſolummodo ſuperſunt 2, 7, 41, 47, 53; 61 &c. quibus diviſio tentanda venit.

Poteſt-

Poteſt vero ſubtractio porro continuari. Sic enim invenitur v. g. $4606 - 4483 = 123 = 3.41$. Quo facto numerus 41 quoque non eſt Diviſor de 4606. Cum e contrario inter reſidua ſaltem tria multipla de 7 occurrere deberent, recte colligitur, numerum 4606 per 7 eſſe diviſibilem. Et re ipſa invenitur $4606 = 2.7.7.47$.

§. 24. Cæterum numeri primi non habent hoc ſpeciale, ut perinde multi numeri excludantur, qui non ſunt Diviſores numeri dati. Cum enim hic agatur de numeris primis inter ſe, etiam locum habere poteſt ſequens proceſſus, quod exemplo demonſtrabo.

Sint inveniendi Diviſores numeri 1001. Cum hic numerus non ſit diviſibilis per 2, 3, 5, neque diviſibilis eſt generatim per $2.^m 3.^n 5.^p$. Tot modis igitur $\pm 2.^m 3.^n 5.^p \mp 1001 = a$ computatum, 1001 non habet Diviſorem communem cum a. Et cum hoc ſi computetur $\pm 2.^m 3.^n 5.^p a^q \mp 1001 = b$, non habebit b diviſorem communem cum 1001. Et hac ratione continuari poteſt argumentatio. V. g.

	1001	*Differentia.*	
$2^{10} =$	1024	23	
$2.3.5.23 =$	690	311	
$3.311 =$	933	68	$= 4.17$
$2.2.3.5.17 =$	1020	19	
$3.^2 5^2 =$	225	776	$= 8.97$
$2.3.^2 5^2 =$	450	551	$= 19.29$
$2.5.97 =$	970	31	
&c.			

Proinde numerus 1001 non eſt diviſibilis per 2, 3, 5 *** 17, 19, 23, 29, 31 &c. E contrario invenitur $1001 = 7.11.13$.

§. 25. Sequens Theorema itidem proponam exemplo. Sumatur de prioribus numeris primis, v. g. $2.3.5.7.11$ productum 2310. Hoc multiplicetur pro arbitrio per $2^m. 3^n. 5^p. 7^q. 11^r$, ita ut ſit $2310. 2^m. 3^n. 5^p. 7^q. 11^r = a$. Nunc quadretur numerus primus proxime major 13; cumque hujus quadratum ſit 169, notentur duo hi numeri

$a + 169 = b$

$a - 169 = c$. Jam ſumptis differentiis ab omnibus numeris intra c, b cadentibus per 2, 3, 5, 7, 11 non diviſibilibus, et a; omnes hæ differentiæ ſunt numeri primi. Nam hæ differentiæ ex natura ſua jam non ſunt diviſibiles per 2, 3, 5, 7, 11. Porro minores ſunt quam 169. Cum vero intra 1 et 169 non cadat numerus diviſibilis, non habens diviſorem < 13; tum ſi qua inter dictas differentias diviſibilis foret, deberet eſſe diviſibilis per 2, 3, 5, 7 aut 11. Verum hæ jam excluſæ ſunt; ac proinde omnes hæ differentiæ ſunt numeri primi.

Habeatur v. g. $a = 2.3.5.5.7.11 = 11550$; tum erit $a - 169 = 11381$; $a + 169 = 11719$.

Sumptis jam omnibus numeris intra 11381 et 11719 per 2, 3, 5, 7, 11 non diviſibilibus, eorumque differentiis a 11550, invenitur.

11550	*Diff.*	11550	*Diff.*
11537	13	11563	13
11533	17	11567	17
11531	19	11569	19
11527	23	11573	23
11521	29	11579	29
11519	31	11581	31
11513	37	11587	37
11509	41	11591	41
11507	43	11593	43
11503	47	11597	47
11497	53	11603	53
11491	59	11609	59
11489	61	11611	61
11483	67	11617	67
	&c.		&c.

Cum proinde omnes numeri primi, incipiendo a 13 hic appareant, manifeſtum eſt, poſita hac baſi, iterum ope numeri 11550 omnes numeros per 2, 3, 5, 7, 11 non diviſibiles intra 11381 et 11719 interjectos reperiri poſſe. Proinde ſi quærendi eſſent diviſores numeri 11591, jam ex eo, quod hic numerus excedit numerum 11550 quantitate numeri primi 41; colligi poſſet, 11591 per 2, 3, 5, 7, 11, non eſſe diviſibilem. Et revera numerus 11591 invenitur $= 67.173$.

§. 26. Juxta hæc Theoremata prodeſſe poterit Tabula, qualem ego ſub Nomine: *Numeri Formæ* $2^n. 3^m. 5^p. 7^q$ inſerui. Illa continet omnes numeros ab 1 uſque 10000, non habentes Diviſores præter 2, 3, 5, 7. Ampliorem hujus Tabulæ uſum oſtendam infra. *

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* Hos numeros amplificatos ordinum $2^m. 3^n. 5^p. 7^q. 11^r. 13^s. 17^t$ quondam computaveram omnes uſque ad 10 milliones, adjunctis cujuſque diviſoribus ope litterarum; ſed incuria amici, cui illos commodaveram, perierunt. Reſtituentunr faventibus circumſtantiis.

III.

Quædam Animadverſiones ſuper Diviſores Numerorum.

§. 27. Quilibet numerus diviſibilis ſemper conſiderari poteſt ut multipium Primorum, ita, ut his inventis, reliqui etiam Diviſores inventi ſint. Numeri primi, quorum Productum eſt datus numerus, apte vocantur Factores ſimplices; et hoc nomine diſtinguuntur a reliquis. Numerus Diviſorum ſimul creſcit cum numero Diviſorum ſimplicium. Hic notandum eſt, ſi numerus pluries ſit diviſibilis per eumdem primum, illum primum toties reponendum eſſe inter ſimplices, ſi dare velimus certam regulam de numero Factorum. Sic v. g. eſt $945 = 3.3.3.5.7$; et ideo hic numerus habet 5 Factores ſimplices. His præmiſſis ſequentes leges bonum uſum habebunt. μ)

§. 28. *Si numerus duos tantum habeat Factores ſimplices, unus eorum neceſſario minor eſt Radice quadratica, aut ipſa radix quadrata dati numeri.* Si enim ambo Factores majores eſſent quam hæc radix, productum majus eſſet numero dato. Sed hoc repugnat denominationi &c. *Non invento* igitur *pro quocunque numero dato Diviſore minore, quam eſt radix quadratica, numerus nullum habet Diviſorem; atque inde primus eſt.*

§. 29. *Si numerus datus habeat tres Factores ſimplices, unus horum Factorum neceſſario minor eſt Radice cubica dati numeri.* Si enim omnes Factores eſſent majores radice cubica, numerus major eſſet ſe ipſo, quod repugnat. *Non* itaque *invento pro dato numero Diviſore minore radice cubica, numerus aut nullum, aut duos ſolum habet Factores ſimplices.*

§. 30. In eodem caſu, *ubi* nempe *numerus tres habet Factores ſimplices, ex eodem fundamento unus neceſſario major eſt radice cubica dati numeri.* E contrario *tertius Factor jam major jam minor eſſe poteſt radice cubica.* Ad hoc poſtremum determinandum ponatur Factor medius $= a$; maior $= ma$; minor $= \frac{a}{n}$; tum erit Productum $= a^3 m : n$; Radix cubica $= a\sqrt[3]{(m : n)}$. Si proinde $m : n > 1$, erit Radix cubica major quam a; in caſu oppoſito aut æqualis, aut minor.

μ) Hæ leges magni uſus ſunt in perſequenda habilitate numerorum ad certos intentus. Patet enim, numeros plurium Diviſorum ad longe plures fines accommodari poſſe, quam primos, aut duorum ſolum factorum ob naturam ſuam uniformem. Plura de his legibus inferius, *nota* ξ.

§. 31. *Si numerus habeat quatuor Factores ſimplices, unus horum Factorum neceſſario eſt minor, et unus neceſſario major radice biquadratica dicti numeri. Alteri duo Factores aut majores aut minores eſſe poſſunt; niſi duo, tres, aut omnes quatuor ſint æquales radici biquadraticæ.* Hoc demonſtratur ut theoremata ſuperiora. Et ſic in genere liquet: *Quando numerus habet* n *Factores ſimplices, unum illorum eſſe debere majorem, alterum minorem radice* n^{ta} *dicti numeri; et reliquos tum majores, tum minores eſſe poſſe, niſi duo, aut plures, aut omnes æquentur dictæ radici.*

§. 32. Cum occurrant caſus, ubi numerus ſervire non poteſt, niſi habeat plures Factores ſimplices; hæ Propoſitiones hunc habent uſum, ut ex invento minimo Factore judicari poſſit, an operæ pretium ſit quærere reliquos. Sic v. g. numerus extenſus ad 100,000.000, non poteſt habere quatuor Factores ſimplices, niſi minimus ſit infra 100.

§. 33. Si numerns a diviſibilis ſit per m, etiam $a - m$ per m diviſibilis eſt; et vice verſa: ſi m non ſit diviſor de a, neque erit de $a - m$.

Hoc theorema aut hic omitti, aut generalius proponi potuiſſet; quia pridem generalius cognitum eſt. Applicabo illud hic omiſſa tamen demonſtratione, quia ſequens theorema illi innititur.

§. 34. Datis Factoribus ſimplicibus, aut etiam omnibus Diviſoribus ab 1 uſque $a - 1$; ſimplices Factores, aut etiam ſinguli Diviſores numeri proxime majoris a inveniri poſſunt retrorſum numerando. *v*)

Scribantur numeri 1, 2, 3 .... $a - 1$ ſecundum ordinem, et infra, aut juxta illos illorum Factores ſimplices, aut omnes eorum diviſores. Jam ſit m Diviſor numeri a, erit quoque m diviſor numeri $a - m$; propterea in ſerie ſcripta infra, aut penes numerum $a - m$ occuret diviſor m. Jam numerus $a - m$ eſt numerus m^{us} retrorſum de a numeratus. Hinc diviſor m numerando retrorſum repertus eſt.

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v) Non poſſum hic ſilentio præterire emolumenta, quæ propria quadam hujus Theorematis contemplatione, ſine reſpectu ad præſentes paginas, conſecutus ſum.

Non tantum Factores numerorum datæ baſi proximorum, ſed immenſum quodammodo diſtantes illius uſu reperiri poſſunt: cognita ſolum diſtantia numeris expreſſa. Ampliarique poteſt, et ad diſtantias qualeſcunque applicari ope baſium Factorum interjectarum. Sic ope baſeos ſubſidiariæ, quæ omnes omnium numerorum Factores ab 1 uſque 26000 ordine continuo continet, et ope 16 baſium particularium ſeu intercalarium unius folii diſquiruntur Factores numerorum intra limites 1 et 24 Milliones. Quodvis folium ſeu plagula ſervit 1536.000 numeris. Sed uberius de his loco ſuo. *Vide etiam Præf. Interp.*

Si vero *m* non ſit diviſor de *a*, tum *m* itidem non occurret infra aut penes *a — m*; quia tandem *m* non eſt diviſor de *a — m*. Jam quia hic ſupponitur, diviſores de *a* adhuc ignorari; ponatur loco *m* ſecundum ordinem 1, 2, 3, 4, 5, 6, &c. et apparet illico, an, aut qui horum numerorum reperiantur illis locis, ad quos devenitur retrorſum numerando. Jam ſequuntur Exempla.

§. 35. Primum quando ſolum de Factoribus ſimplicibus quæſtio eſt. In hoc caſu ſolum ad tot loca retrorſum numeratur, quot unitates continet radix quadrata dati numeri. Hoc quoque non eſt ſemper neceſſe. Habeantur v. g. Factores numerorum uſque 104, et deſiderentur illi de 105; tum totus calculus ſic peragitur.

105	104	103	102	101	100	99	98	97	96	&c.
	2		2		2	3	2		2	
	13		3		5	11	7		3	
			17							
	1	2	3	4	5	6	7	8	9	
			*		*		*			

§. 36. In ſerie prima ſunt numeri, in ſecunda eorum Factores; tertia indicat numerationem retrorſum, ſimulque diſtinguit locis 3, 5, et 7^{mo} Diviſores 3, 5 et 7; qui proinde etiam ſunt Factores ſimplices de 105. Cum 105 ſit impar, ſtationes numerorum imparium 103; 101 etc. prorſus omitti potuiſſent; et tum ſecundum numeros impares 1, 3, 5, 7, retrorſum numeratum fuiſſet; Calculus fuiſſet ſequens:

105	104	102	100	98	96	&c.
	2	2	2	2	2	
	13	3	5	7	9	
		17				
	1	3	5	7	9	
		*	*	*		

§. 37. Apparet autem facile, quia 2 non eſt Diviſor de 105; utpote numeri imparis, loco 104, 102, 100 &c. potuiſſe ſubrogari dimidium; tumque foret calculus

105	52	51	50	49	48	&c.
	2	3	2	7	2	
	13	17	5		3	
	1	3	5	7	9	&c.
		*	*	*		

Hæc abbreviatio dat Poblemati novam formam, cujus tenor jam ſequens eſt: *Datis Factoribus numerorum ab* 1 *uſque a, inveniri debent factores numeri* $2a + 1$.

§. 38. Inventis hac ratione Factoribus minoribus dato numero ; nonnumquam habentur omnes. Et hoc invenitur multiplicando Factores inter ſe. ξ) Invento vero ſolum uno Factore, tum alter major eſt radice quadratica, inveniturque aut diviſione aut continuata numeratione. Tandem ubi plures ſunt factores, non numquam unus alterque iterato occurrunt. Hoc vero declaratur minimo negotio

§. 39. Caſus ſecundus generalis eſt, ubi de omnibus Diviſoribus ſermo eſt. Tum in ſerie ſecunda illi diviſores bini et bini ordinantur, quorum productum æquatur numero, cujus Diviſores ſunt. Inventis enim hac ratione minoribus, majores inveniuntur ſine mora. Ponatur numerus $a - m$ æqualis producto de m, b; tum erit a productum de m, $b + 1$. Et ſic ad Diviſorem m correſpondens condiviſor $b + 1$ ſimul inventus eſt. Dati ſint v. g. Diviſores numerorum uſque 20, et quærantur Diviſores de 21; tum calculus ſequens locum habebit

21,	20,	19,	18,	17,	16 &c.
	2.10		2.9		2.8
	4. 5		3.6		4.4
	1	2	3	4	5
			*		

Hic jam invenitur Diviſor 3, et juxta illum 6, qui unitate auctus producit diviſorem correſpondentem 7.

§. 40. Cum hic quoque 21 ſit impar, numeri impares 19, 17 &c. itidem omitti poſſent, breviuſque obtineretur:

21,	20,	18,	16 &c.
	2.10	2.9	2.8
	4. 5	3.6	4.4
	1	3	5
		*	

Poſitis quoque hic dimidiis loco 20, 18, 16 &c. æque bene ſuccederet. Notandum tamen eſt, diviſis tum diviſoribus paribus ſecundæ ſeriei per 2, hujus rationem habendam eſſe pro diviſore correſpondente ſuperius propoſito.

ξ) Operæ pretium erit, legem §§. 29. 31. prolatam hic ita amplificare: Omnis numerus trium Factorum, unum habet neceſſario minorem radice cubica, duos radice quadrata.

Omnis numerus quatuor Factorum, unum habet neceſſario minorem radice biquadratica, duos minores radice cubica, tres radice quadratica. Demonſtratio loco citato adducta æque facile extenditur ad amplificationem Theorematis.

21 ,	10 ,	9 ,	8 &c.
	2.5 ,	3.3 ,	2.4
	1.	3.	5 &c.
		*	

Nempe hic quoque Diviſor 3 apparet. Verum illius confactor jam non eſt 6, ſed 3. Hinc duplo hujus 3 adjici debet 1, ut obtineatur Diviſor correſpondens 7.

§. 41. Hac ratione Tabula *Anjemæ* continuari poſſet. *) Illa continet ab 1 uſque 10000 non ſolum omnes numeros, eorumque Factores ſimplices, ſed etiam omnes eorum Diviſores; hoc ſolum diſcrimine, quod Factores non ſecundum Paria (§. 39.), ſed ſecundum ordinem incrementi expoſiti ſint. Sic etiam, qui Tabula Anjemæ inſtructus eſt, invenire poteſt immediate Diviſores cujuſque numeri intra 10000 et 20000 interjectos.

Si enim par eſt, dimidium ejus jam per ſe invenitur in dicta Tabula. Si e contrario ſit impar, v. g. $2a+1$; numeratur in Tabula ab a per numeros impares retrorſum, ut apparet ex ultimo exemplo, ubi Diviſores de 21 ope diviſorum de 10, 9, 8 &c. deteximus.

§. 42. Hoc compendium, paucis mutatis etiam extendi poteſt ad numeros interceptos intra 20000 et 30000 per 3 non diviſibiles. Problema hoc generaliter ita ſonat: *Expoſitis Diviſoribus numerorum uſque* a *invenire Diviſores numeri* $3a+1$, aut $3a+2$. Sufficiet, methodum quibuſdam Exemplis declarare. Datus numerus ſit 77. Jam cum $(77-2):3=25$, neceſſe eſt habere Diviſores uſque 25, et Calculus erit ſequens:

77 ,	76 ,	75					
		25 ,	24 ,	23 ,	22 ,	21 ,	20 &c.
		5.5 ,	2.12 ,	23 ,	2.11 ,	3.7 ,	2.10
			3.8				4.5
			4.6				
	1	2	5	8	11	14	17
					*	*	

Abbreviatio hic incipit cum 75, ut primo numero diviſibili per 3. Inde progreditur Numeratio in ſerie inferiore ſecundum numeros creſcentes tribus unitatibus. Hoc vero efficit, ut nume-

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*) Opinione citius confici aut continuari poteſt Tabula Factorum omnium ex data baſi; præſertim, ubi numeri per 2, 3, 5 non diviſibiles jam definiti ſunt expoſitis ſuis Factoribus. Sic expoſiti ſunt a me diviſores omnium numerorum uſque 30000 abſque ullius alius Tabulæ ope. Continuarique poteſt uſque ad 408000, ſuppetentibus nobis Tabulis ad hunc terminum cum expoſitis Factoribus hujus conditionis. Taceo de magnis Tabulis uſque 2856000, Viennæ et Pragæ depoſitis.

rando non ſemper deveniatur ad ipſum Diviſorem, ſicut hic 11, ſed nonnumquam etiam ad duplum Diviſoris, ut hic 14. Liquet enim, proprium diviſorem ſeptem in ſerie inferiore ſaltu præteritum eſſe.

§. 43. Pro numero 55, qui ſervit pro ſecundo exemplo, calculus eſt præſens:

55 , 54										
18 ,	17 ,	16 ,	15 ,	14 ,	13 ,	12 ,	11 ,	10 ,	9 ,	&c.
2.9,	17 ,	2.8 ,	3.5 ,	2.7 ,	13 ,	2.6 ,	11 ,	2.5 ,	3.3	
3.6		4.4				3.4				
1	4	7	10	13	16	19	22	25	28	&c
			*				*			

Hic incipit Abbreviatio ſtatim apud 54; et in ſerie inferiore invenitur utrinque duplum diviſorum 5 et 11.

§. 44. Facile conſtat, hunc proceſſum continuari poſſe; quamvis tum etiam in ſerie inferiore diviſorum loco majora multipla occurrant, quorum ratio haberi debet. E. g. Dato numero 539, et ſuppetentibus ſolum Diviſoribus numerorum uſque 53, id eſt partem decuplo minorem; calculus fit, ut ſequitur:

539 . . . 530										
53	52	51	50	49	48	47	46	45	44	&c.
53 ,	2.26,	3.17,	2.25 ,	7.7 ,	2.24 ,	47 ,	2.23,	3.15,	2.22	
	4.13		5.10		3.16			5.9	4.11	
					4.12					
					6. 8					
9	19	29	39	49	59	69	79	89	99	etc.
				*					*	

Hic ſeries inferior incipit cum 9, quia 539 — 530 = 9. Progreditur deinde continuo per numerus 10 unitatibus auctos. Apud 49 liquet, numerum 539 bis dividi poſſe per 7; et apud 99 invenitur tertius Factor 11; unde liquet, numerum 539 eſſe = 7 . 7 . 11.

§. 45. Dyadica Leibnitiana, cujus Methodum haud pridem *Branderus*, ſub titulo: *Arithmetica binaria ſeu Dyadica* apte expoſuit, non raro ita exprimit numeros, ut eorum Diviſibilitas manifeſta ſit. *) Semper optavi, ne *Leibnitius* in ſua Dyadica

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*) Non acquievi huic aſſertioni examinaturus leges et proprietates ſyſtematum ſpecialium paulo maturius. Neque fruſtra, inventum enim eſt, ſymmetriam, quam Cl. *Lambert* hic de ſyſtemate dyadico celebrat, in ſyſtematis altioribus eam nanciſci ubertatem, ut ipſa repræſentationum multitudo oculorum intuentium aciem quodammodo obtundat. Cum interea forma dyadica ſignorum multitudine hæc emolumenta ad numeros infimos deprimat.

ele-

elegiſſet notas communes 1; 0, ſed ut alias adhibuiſſet; quia ſæpius, ubi numeri dyadici et communes ſimul adhibentur, indicandum eſt, eſſe dyadicos. Uſu receptum eſt in Algebra, loca vacua per * denotare; et hinc hoc ſignum non mutata ſignificatione ſervire poteſt loco zeri 0 Leibnitiani. Pro 1 adhibebo *U*. Sic v. g. invenitur

15 = UUUU diviſibile per UU (et U* U)
27 = UU* UU —— UU (et U** U)
45 = U* UU* U —— U* U (et U** U)
51 = UU** UU —— UU (et U*** U)
63 = UUUUUU —— UU et UUU (et U* U* U.)
85 = U* U*U*U —— U*U et U** U (non, ſed U*** U)
95 = U*UUUUU —— U* U (et U** UU). F.
119 = UUU*UUU —— UUU et U*** U.

In omnibus his caſibus ſola ſymmetria in ordine ſignorum * U conſpicua diviſorum criterium offert. Et hæc ſymmetria hic ſæpius, quam in numeris vulgaribus occurrit, quia hic duo tantum ſigna alternant. Sæpius etiam tum, ubi ſymmetria abſconditur, reſtaurari poteſt facili numerorum evolutione. Sic v. g. numerus (25 = UU* U non eſt ſymmetricus. Eſt autem poſito loco U in tertia ſtatione, duplici UU in ſecunda UU* U = U* U* + UU.

Hoc expertus ſum elaborando Opuſculum quoddam dictum: *Arithmetica Univerſalis in numeris.* Quo facto magnam mihi facilitatem conciliaveram, leges expreſſionibus ſymmetricis fundatas experiendi. Quod tamen ordinatis in debitas claſſes operationibus quodammodo neglexi; inventis legibus magis univerſalibus innixis formulis $m^n - 1$, $m^n + 1$ &c. Videatur Nota λ ad §. 16. ubi *m* quamlibet ſyſtematis baſim ſeu Denominatorem indicat. Hanc indagationem locupletavi ope Tabulæ repræſentantis Abacum quemdam Pythagoricum pro omnibus numerorum Multiplis infra 31; cujus ope omnes numeros quocumque ſyſtemate intra dictos terminos expreſſos, ex ſyſtemate decimali et retro immediate; duce vero ſyſtemate decimali mediate ex quovis ſyſtemate horum ordinum in quodlibet alterum opinione citius traducebam. Adjicio hic Tabulam Multiplorum omnium infra 20^2 expreſſorum per ſyſtema hujus denominatoris, ſubſcriptis tamen numeris decimalibus. Ne tamen ſignorum novitas fatiget attentionem, ſubſtitui pro valoribus ſupra 9 litteras minutas Alphabeti conſueti, poſitis $a = 10$, $b = 11$ etc.

Superſedeo explicatione ampliori, Lectori ſagaci ſuperflua. Nec difficile erit, talem apparatum incendio mihi abreptum, ſi congruum fuerit, reſtaurare.

Ruptis hac ratione portis propria quadam et violenta methodo, et inſcius eorum, quæ hac de re ſcripta et in Memorialibus Acad. Reg.

1	1	2	3	4	5	6	7	8	9	*a* 10	*b* 11	*c* 12	*d* 13	*e* 14	*f* 15	*g* 16	*h* 17	*i* 18	k 19	10 20
	2	4	6	8	*a* 10	*c* 12	*e* 14	*g* 16	*i* 18	10 20	12 22	14 24	16 26	18 28	1*a* 30	1*c* 32	1*e* 34	1*g* 36	1*i* 38	20 40
		3	9	*c* 12	*f* 15	*i* 18	11 21	14 24	17 27	1*a* 30	1*d* 33	1*g* 36	1k 30	22 42	25 45	28 48	2*b* 51	2*e* 54	2*h* 57	30 60
			4	*g* 16	10 20	14 24	18 28	1*c* 32	1*g* 36	20 40	24 44	28 48	2*c* 52	2*g* 56	30 60	34 64	38 68	3*c* 72	3*g* 76	40 80
				5	15 25	1*a* 30	1*f* 35	20 40	25 45	2*a* 50	2*f* 55	30 60	35 65	3*a* 70	3*f* 75	40 80	45 85	4*a* 90	4*f* 95	50 100
					6	1*g* 36	22 42	28 48	2*e* 54	30 60	36 66	3*c* 72	3*i* 78	44 84	4*a* 90	4*g* 96	52 102	58 108	5*e* 114	60 120
						7	29 49	2*g* 56	33 63	3*a* 70	3*h* 77	44 84	4*b* 91	4*i* 98	55 105	5*c* 112	5k 119	66 126	6*d* 133	70 140
							8	34 64	3*c* 72	40 80	48 88	4*g* 96	54 104	5*c* 112	60 120	68 128	6*g* 136	74 144	7*c* 152	80 160
								9	41 81	4*a* 90	4k 99	58 108	5*h* 117	66 126	6*f* 135	74 144	7*d* 153	82 162	8*b* 171	90 180
									10	50 100	5*a* 110	60 120	6*a* 130	70 140	7*a* 150	80 160	8*a* 170	90 180	9*a* 190	*a*0 200
										11	61 121	6*c* 132	73 143	7*e* 154	85 165	8*g* 176	97 187	9*i* 198	*a*9 209	*b*0 220
											12	74 144	7*g* 156	88 168	90 180	9*c* 192	*a*4 204	*ag* 216	*b*8 228	*c*0 240
												13	89 169	92 182	9*f* 195	*a*8 208	*b*1 221	*be* 234	*c*7 247	*d*0 260
													14	9*g* 196	*aa* 210	*b*4 224	*bi* 238	*cc* 252	*d*6 266	*e*0 280
														15	*b*5 225	*c*0 240	*cf* 255	*da* 270	*e*5 285	*f*0 300
															16	*cg* 256	*dc* 272	*e*8 88	*f*4 304	*g*0 320
																17	*e*9 289	*f*6 306	*g*3 323	*h*0 340
																	18	*g*4 324	*h*2 342	*i*0 360
																		19	*i*1 361	k0 380
																			20	100 400

NOTA.

Litterarum, dum ultra decem numeratur, cum ſignis decimalibus coordinatio ideo præferenda eſt aliis ſignis arbitrariis, quia ordo uſu receptus memoriam quam maxime adjuvat.

§.

§. 46. Jam quæritur de *Methodo facillima*, *quemvis numerum dyadice exprimendi*. Declarabo hoc exemplo numeri 35351. Tota computatio ſic peragitur:

35351,U
17675,U
8837,U
4418,*
2209,U
1104,*
552,*
276,*
138,*
69,U
34,*
17,U
8,*
4,*
2,*
1,U

Hinc numer. 35351 dyadice = U * * * U * U * * * * U * U U U
* Quod ita declaro

$U = 2^{15} = 32768$
$U = 2^{11} = 2048$
$U = 2^{9} = 512$
$U = 2^{4} = 16$
$U = 2^{2} = 4$
$U = 2^{1} = 2$
$U = 2^{0} = 1$
35351

F.

Mediatur nempe ſine interruptione omiſſis Fractionibus, donec deveniatur ad 1. Poſt quemvisnumerum imparem ſcribitur *U*, et poſt pares *; tum numerus ordine inverſo poſitus dyadice expreſſus eſt, translata ſerie in lineam horizontalem. Hæc expreſſio jam vix aliquam ſymmetriam refert. Interea loco primarum 7 ſtationum: *U* * * * *U* * *U* repartita prima in ſequentem ſcribi poteſt: $\left\{\begin{matrix} UUUUUU, \\ UU \end{matrix}\right.$ et hic reſolvitur in: $\left.\begin{matrix} U{*}\,UUU \\ U{*}\,UUU \end{matrix}\right\}$. Jam cum quinque ultimæ

Berolinenſis 1771. collecta reperiuntur, evolvi quam plurimas leges ſerierum decimalium numeris primis proprias.

Sed pertæſus reſtrictiones Syſtematis cujusdam ſpecialis, primum inveni Methodum quamvis ſeriem *Quotorum* decadice expreſſam, traducere in Syſtema quodcunque diverſum, et retro. Sed abhorrens recurſum ſignorum eorumdem (quippe in ſerie numeri primi 97, ſeu $\frac{1}{97} =$ 0,0103092783, 5051546391, 7525773195, 8762886597, 93814432 . . . cum complemento cujusque notæ ad 9. quælibet nota quaſi decies recurrit) modo minime ſymmetrico, refugi ad ſubſidia generaliſſima nunquam deficiencia, quæ non ſunt hujus loci.

Ex innumeris legibus et proprietatibus primaria quædam hæc fuit: expreſſiones ſymmetricas, quas *Lambert* de numeris dyadicis celebrat non ſolum eſſe characterem omnibus numerorum ſyſtematibus pro determinatis numeris primis proprium, ſed etiam creſcere multitudinem expreſſionum ſymmetricarum pro ratione ſyſtematum altiorum denominatorum, ita ut operæ pretium non ſit, defatigare memoriam proceſſibus ſingularibus, ubi leges non ſuppetunt definitæ, ut hic §. 46.

ſtationes eumdem ordinem habeant, ſequitur, numerum per *U*UUU* eſſe diviſibilem.

§. 47. Alterum Problema eſt: *Quemvis numerum dyadice expreſſum reducere ad expreſſionem vulgarem* (decadicam). E.g. Numerum ſuperius inventum *U * UUU*. Hoc jam non fit mediando, ſed duplicando; et calculus diſponi poteſt ratione ſequente:

U	1
*	2
U	5
U	11
U	23

Scribuntur nempe ſigna *U * UUU* deorſum verſus, et incipit duplicatio, apud 1, ita, ut cuivis duplo adjiciatur 1, quoties ponitur penes *U*. Cæterum computatio etiam ſic fieri potuiſſet:

U	*	*U*	*U*	*U*
1	:	:	:	:
	2	:	:	:
		5	:	:
			11	:
				23

Hic modus operandi extenditur ulterius. Verum abrumpo hoc loco; quia ſolum adduxi reſpectu diviſorum numerorum; in quantum hi illius ope facilius inveniuntur. Cæterum adjicere debeo, me, computando aliquid methodo dyadica, loco ſignorum (*U* *) libentius adhibere ſimpliciſſima (1, .) [ρ]

§. 48. Ratione formularum ſequentium itidem brevis ero. Sunt, ut liquet producta omnium numerorum primorum a 7 uſque 173. In genere ſerviunt ad hoc, ut numerus datus habens diviſorem in-

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[ρ] Non recedens a fine principali Factorum ſed a methodis eos indagandi reſtrictis per ſyſtemata particularia, coactus fui refugere ad ſubſidia generaliſſima, ubi ſignorum forma in minimam conſiderationem venit, niſi in quantum adjuvat memoriam ordine quodam ſucceſſivo uſu jam recepto: cujusmodi ſunt ſigna 1,2,3 etc. et litteræ *a,b,c*, ut apparet ex Tabula multiplorum notæ præcedenti π inſerta.

Finis hic generalis certas Baſes induxit, quarum una erat Tabula Potentiarum de *n* (Denominatorum ſyſtematum infra 31), cum multiplis earum uſque *n* — 1. Subrogatis etiam, ſi præplacet, in locum litterarum ſignis duplicibus arcu unitis, v. g. $\overset{\frown}{10}\ \overset{\frown}{11}\ \overset{\frown}{12}$, loco *a b c*. Inſtar omnium exemplo nobis ſit Tabula potentiarum multiplicatarum de 6.

tra 7 uſque 173 habeat communem Diviſorem cum uno aut altero horum productorum.

$$7 \,.\, 11 \,.\, 13 \,.\, 17 \,.\, 19 \,.\, 23 \,.\, 29 = 215\ 656\ 441$$

Expon.	*mult.*		2	3	4	5
6^0	=	1	2	3	4^h	5
6^1	=	6	12	18	24^g	30
6^2	=	36	72	108^f	144	180
6^3	=	216	432	648^e	864	1080
6^4	=	1296	2592	3888^d	5184	6480
6^5	=	7776	15552^c	23328	31104	38880
6^6	=	46656	93312	139968^b	186624	233280
6^7	=	279936.	559872.	$839808.^a$	1119744.	1399680

Ope hujus Tabulæ numeri decimales quam celerrime in ſenarios traduci poſſunt et retro. Exemplo nobis ſit 100000 in quovis reſpectu.

$$\begin{array}{rr}
 & 1000000 \\
3.\ 6^7 = & \underline{839808^a} \\
 & 160192 \\
3.\ 6^6 = & \underline{139968^b} \\
 & 20224 \\
2.\ 6^5 = & \underline{15552^c} \\
 & 4672 \\
3.\ 6^4 = & \underline{3888^d} \\
 & 784 \\
3.\ 6^3 = & \underline{648^e} \\
 & 136 \\
3.\ 6^2 = & \underline{108^f} \\
 & 28 \\
4.\ 6^1 = & \underline{24^g} \\
\underline{4.\ 6^0 =} & \underline{4}
\end{array}$$

Hinc expreſſio ſenaria erit $\underline{33233344}$

idest, reducendo in numeros decimales.

$$\left\{\begin{array}{lr}
3.\ 6^7 = a = & 839808 \\
+\ 3.\ 6^6 = b = & 139968 \\
+\ 2.\ 6^5 = c = & 15552 \\
+\ 3.\ 6^4 = d = & 3888 \\
+\ 3.\ 6^3 = e = & 648 \\
+\ 3.\ 6^2 = f = & 108 \\
+\ 4.\ 6^1 + 4.\ 6^0 = 24 + 4 = & \underline{28} \\
 & 1000000
\end{array}\right.$$

7 . 11 . 13 . 17 . 19 . 23 . 29 = 215 656 441
31 . 37 . 41 . 43 . 47 = 95 041 567
53 . 59 . 61 . 67 . 71 = 907 383 479
73 . 79 . 83 . 89 . 97 = 4132 280 413
101 . 103 . 107 . 109 . 113 = 13710 311 357
127 . 131 . 137 . 139 . 149 = 47205 940 259
151 . 157 . 163 . 167 . 173 = 111641 786 731
etc. etc.

Tab. III. Hi numeri itidem ſequuntur proxime poſt Tabulam multiplicationis (§. 8) relatam. σ

Cumque non raro indagantur Diviſores numerorum ope numerorum quadratorum; Tab. IV. eadem pagina conſignationem ultimarum notarum numeri quadrati imparis adjeci; ſicut et Formulas reliquas, Tab. V. quæ determinant quatuor caſus, qua ratione numerus per

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Acquieſco huic generi ſubſidiorum ambobus finibus inſervienti; omiſſis reliquis paſſim obviis.

Admonendum tamen judico, diverſa cum non nullis numerorum ſyſtematibus, ex quorum cognitione diviſorum diverſorum natura potiſſimum decernitur, naſci commoda, ubi ſuſpicamur latere incommoda. Sic v. g. Potentiæ Baſium altiorum multiplicandi facilitatem quidem eludunt, expreſſionem tamen, reductis ad numerum ſemper minorem ſignis, etc. ſimplificant.

Hoc incrementum quam proxime determinari poteſt, comparando Potentias inter ſe. Sic computatio *dyadica* numerum ſignorum fere $3\frac{1}{4}$ vicibus auget, reſpectu decadicæ. Syſtema *ſenarium*, quod præter 2, 3, 5 diviſorem 7 (loco 11) aperit, vix amplius quam $\frac{6}{5}$ abſumit. *Centenarium* $\frac{1}{2}$ de ſignis decimalibus applicat.

Atque inde de variis ſyſtematum diverſorum emolumentis, et præ primis de felici ſyſtematis noſtri decimalis mediocritate judicium ferri poteſt.

σ Clavis Factorum ab 1 uſque fere 25,000.000 ſubſidia continet, omnes numerorum Diviſores infra 400 inveniendi, percurſis ad ſummum quatuor columnis ita ordinatis, ut in prima columna omnes Diviſores occurrant infra 100, cum maxima parte reliquorum, in ſecunda omnes infra 200, etc. ita tamen, ut rariſſime refugiendum ſit ultra primam, rarius adhuc ultra ſecundam ea lege ut percurſis 7, 11, 13, 17 ... unitatibus certum ſit, numerum datum nullo horum diviſorum eſſe præditum, niſi cum æquali diviſore diſtantiæ concurrat. Totum negotium ſi ad omnes 4 columnas continuandum ſit, quod fit cum numeris primis, et quibuſdam, quorum minimus Factor excedit 400, paucis minutis abſolvitur.

2 et 3 non diviſibilis ſit differentia duorum Quadratorum. Hæ formulæ indicant, in quovis caſu multos numeros quadratos jam per ſe excludi; atque inde computatio multum abbreviatur.

§. 49. Sic ſi detur numerus 35351, invenitur

$$35351 = 2946 . 12 - 1$$

Proinde per primam formulam

$$35351 = 36 a^2 - 4 b^2 - 4 b - 1$$
$$8838 = 9 a^2 - (b^2 + b)$$

Jam cum $b^2 + b$ ſemper par ſit, a par ſit oportet. Ponatur proinde $a = 2 c$; invenitur

$$8838 = 36 c^2 - (b^2 + b)$$
$$c^2 = 245 + \frac{18 + bb + b}{36}$$

Unde conſequitur eſſe

$$- \frac{bb + b}{18}$$

numerum imparem. Hoc vero non ſuccedit, niſi b æquetur uni horum 4 valorum

$$b = 36 n + 9$$
$$b = 36 n + 17$$
$$b = 36 n + 18$$
$$b = 36 n + 26$$

Inde obtinentur quatuor formulæ

$$c^2 = 248 + 36 n^2 + 19 n$$
$$c^2 = 254 + 36 n^2 + 35 n$$
$$c^2 = 255 + 36 n^2 + 37 n$$
$$c^2 = 265 + 36 n^2 + 53 n$$

Hæ formulæ jam ſunt multo ſimpliciores, quam ſi ſimus contenti cum

$$35351 = A^2 - B^2$$

conſervatis inde omnibus quadratis.

Invenitur etiam, poſitis, v. g. in prima formula loco n ſucceſſive 0, 1, 2, 3, 4 etc. et ſumpto $n = 4$, valor

$$c^2 = 900$$
$$c = 30$$

et inde

$$a = 60\ ,\ b = 153$$

$$6a = 360\ ,\ 2b + 1 = 307$$

$$35351 = 360^2 - 307^2 = (360 + 307).(360 - 307). = 667.\ 53$$

Eadem formula pro $n - 8$ producit valorem

$$c^2 = 2704$$

$$c = 52$$

$$a = 104\ ,\ b = 297$$

$$6a = 624\ ,\ 2b + 1 = 595$$

$$35351 = 624^2 - 595^2 = 1219.\ 29$$

Unde nullo negotio conſequitur, eſſe

$$35351 = 53.\ 29.\ 23$$

ſeu tertium Factorem eſſe debere $= 23$.

§. 50. Cæterum quod notandum eſt de omnibus methodis Factores inquirendi, eo ſe reducit, cum numeris primis proceſſum eſſe longiſſimum, tandem nihil inveniendo, quia non ſcitur prævie, an numerus datus diviſores habeat, nec ne. Methodus breviſſima hoc decidendi, quam invenire potui, et quæ aliquantum completior eſſe deberet, fundatur in aſſerto, quod *Fermates* ſine demonſtratione allegat, quod autem poſtea *Eulerus* demonſtravit, et quod in Tratactu de numerorum Diviſoribus, quæ in Actis Eruditorum inſerui, itidem occurrit. Propoſitio ipſa ſequens eſt.

§. 51. Si a ſit numerus primus, b quivis alius per a non diviſibilis, ſemper eſt $\frac{b^{a-1} - 1}{a}$ = num. integer. Neque tamen retro inferri poteſt, ſi hæc formula ſit numerus integer, a eſſe numerum primum, etſi contrarium quam rariſſime eveniat. [τ]

§. 52. Econtrario inferri poteſt: *Quando hæc formula non eſt numerus integer*, a *non eſſe poſſe* numerum primum. Et hoc fere

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[τ] Hanc legem, his paginis inconſultis, in Periodis decimalibus aſſecutus eram; ſerius eam inveni diligentius inquiſitam a Cl. *Obercit* in comm. litt. Lambertino; ſed univerſalitatis amore ad diverſa ſyſtemata tranſii, ſumpto b pro denominatore ſyſtematis, brevique omnium ſyſtematum emolumenta conſecutus. De quibus ſuo loco.

Compoſitorum numerorum leges indagavi. Quilibet num. prim. p ad ſummum habet periodum $p - 1$ terminorum, q vero terminorum $q - 1$. Atque inde pq ad ſummum $(p - 1)(q - 1) = pq - p - q + 1$ terminos. Ex quo patet, periodum de pq nunquam terminari $pq - 1$ terminis. Huic legi innititur propoſitio inverſa. Sed hic non eſt locus.

ſem-

ſemper accidit, quando a eſt numerus diviſibilis, et pro b reſervatur idem valor. Atque etiam, ſi hoc non ſuccederet, pro b tantum ponendus eſt alius numerus; et neceſſario erunt tales numeri, qui formulam

$$\frac{b^{a-1} - 1}{a}$$

non ſinunt eſſe numerum primum. In hac operatione ſemper incipi poteſt ponendo $b = 2$; quia tum dignitates altiores ſola duplicatione obtinentur. Cum vero præprimis quæratur compendium calculi; facile apparet, hic quæri, quomodo $b = 2$. quam celerrime ad potentiam $a - 1$ elevetur. Ad hoc comparatio Progreſſionis Arithmeticæ ac Geometricæ pridem cognita ſequentem methodum offert; quod ſtatim declarabo exemplo. Detur numerus 111, et inveniendum eſt, an ſit numerus primus. Hic igitur eſt:

$$a = 111$$

$$a - 1 = 110$$

Et poſito - - - - - - - $b = 2$

videndum eſt, an

$$\frac{2^{110} - 1}{111} = \text{num. int.}$$

Computatio jam ita peragetur:

Dignit.	*Reſidua*
110	$4 - 1 = 3$
55	$35 - 1 = 34$
54	$73 - 1 = 72$
27	$80 - 1 = 79$
26	$40 - 1 = 39$
13	$200 - 1 = 199$
12	$100 - 1 = 99$
6	$64 - 1 = 63$
3	$8 - 1 = 7$
2	$4 - 1 = 3$
1	$2 - 1 = 1$

Mediatur ſcilicet 110, cumque dimidium 55 ſit impar, diminuatur unitate, ut porro mediari poſſit. Hoc continuatur, donec deveniatur ad 1. Hac ratione obtinentur numeri columnæ, quæ indicat dignitates, ad quas $b = 2$ tum gradatim, tum per ſaltum elevari debet, donec deveniatur ad 2^{110}. [v]

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[v] Talium indagationum uberrima mihi copia fuit. Sed non licuit eligere denominatores tam commodos, ubi neceſſe fuit v. g. de 1009 in-

Hac lege obtinetur

$$2^1 = 2$$
$$2^2 = 4$$
$$2^3 = 8$$
$$2^6 = 64$$

Hic ſcilicet 8 tamquam tertia potentia quadratur ad obtinendam immediate ſextam potentiam. Pari ratione habetur potentia 12ma, quadrando 64. Cum autem $64^2 = 4096$, ac proinde $> a = 111$ ſit, dividatur 4096 per 111, reſervato ſolum reſiduo 100. Hoc duplicatur pro dignitate 13^{a}; quia 2^{13} diviſum per 111 reſiduum duplo majus habet, ac proinde 200. Pro dignitate 26ta quadratur 200; cumque quadratum $40000 > 111$, dividatur itidem 40000 per 111, reſervato ſolum reſiduo, quod eſt 40; duplicaturque pro dignitate 27ma, dando 80. Pro dignitate 54 quadratur 80; quadrato 6400 iterum diviſo per 111, reſervatoque reſiduo 73. Duplicetur hic pro dignitate 55ta; proinde $= 146$, aut quia 111 inde ſubtrahi poteſt, tantum 35. Tandem pro dignitate 110ma quadratum de $35^2 = 1225$ diviſum per 111, exhibet reſiduum 4. Et hoc eſt reſiduum prodiens, quando 2^{110} dividitur per 111.

Cum proinde $2^{110} - 1$ diviſum per 111, det reſiduum 3, conſequitur, 111 non eſſe numerum primum. φ

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tegram Periodum ſiſtere. Deficientibus enim tum ſyſtematis inferioribus, utendum fuit majoribus, quæ in ordine proſecutus duo adſcivi ſubſidia, aut perſequendo exponentes ſecundum terminos diviſorum de $p - 1$, aut nactus terminum inferioris formæ (3, 5, 6, 7) reſpondentem exponenti altiori, multiplicando terminos exponentibus congruis reſpondentes cum talibus terminis, adoptando reſidua ſeu novos terminos æquis locis.

φ Amplior eſt proceſſus, ubi cum numeris majoribus facienda eſt experientia, et neceſſe eſt ad Baſes altiores refugere ad ſeriem integram obtinendam. Quod ut cum debita præcautione peragatur, ſciendum eſt, omnes numeros primos nanciſci periodos tot terminorum diverſorum, quot ſunt diviſores de $p - 1$; v. g. cum $1009 - 1 = 1.\ 1008 = 2.\ 504 = 3.\ 336 = 4.\ 252 = 6.\ 168 = 7.\ 144 = 8.\ 126 = 9.\ 112 = 12.\ 84 = 16.\ 63 = 18.\ 56 = 21.\ 48 = 24.\ 42 = 28.\ 36$ habeat 28 diverſos Factores; apparet poſitis/ pro b ſucceſſive valoribus 1, 2, 3, 4 - - - - 1008, naſci debere 28 diverſas periodos, termino 1008 finitas, quas inter ſyſtema de $11 = b$ ſatisfacit prima vice. Hæc quidem lex eſt univerſalis primorum, non item compoſitorum. Quamvis enim diverſi numeri compoſiti habeant terminos periodicos cum ſuis ſimplicibus communes, demonſtravi tamen alio loco, numeri cujusque compoſiti unitate minuti complures diviſores numquam producere poſſe omnes periodos diviſoribus ſuis competentes; cujus naturæ ſemper ſunt factores maximi de $pq - 1$; quia quilibet numerus compoſitus unitate minutus neceſſario nanciſcitur factores altiores quam $p - 1$, $q - 1$. Quamvis autem hic quodammodo redeat quæſtio ſimilis illi, cui ſatisfactum imus, ſupponendo Factores

S.

§. 53. Poſito $b = 3$, obtentum eſſet

Dign.	*Reſid.*
110	9
55	3
27	36
13	30
6	63
3	27
1	3

Et tum tandem inde concluſum eſſet, quia

$$\frac{3^{110} - 1}{111}$$

non eſt numerus integer, ſed reſiduum habet 8, numerum 111 non eſſe primum.

Cæterum per ſe clarum eſt, hic, ubi ponitur $b = 3$, ac proinde quæruntur dignitates de 3 aut earum reſidua, multiplicandum eſſe per 3, ubi ante duplicabatur. Sic v. g. Pro dignitate 6^{ta} reſiduum eſt 63. Hoc multiplicato in ſe, et quadrato 3969 per 3 multiplicato, et producto 11907 per 11 diviſo, dat reſiduum 30 pro dignitate 13^{tia}.

§. 54. Cum hoc in calculo quæratur compendium poſſibile, facile apparet, ſuperfluum eſſe, pro b ſumere majores numeros, quam primos. Sumatur v. g. $b = 2.3 = 6$. Jam ſi 2^{a-1} diviſum per a det reſiduum m, et 3^{a-1} diviſum per a reſiduum n; faciet 6^{a-1} diviſum per a reſiduum mn. Eſt autem, ſi a ſit numerus primus, ſemper $m = n = 1$; ac proinde etiam $mn = 1$. Atque ita tantum per ambages per $b = 6$ inveniretur idem, quod per $b = 2$ aut $b = 3$ ſimplicius et facilius inventum fuiſſet. Cum proinde numeri primi 2, 3, 5 hoc intuitu breviſſimum faciant calculum; dignitates horum numerorum, quantum per ſpatium trium

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de $p - 1$ ſciri; tamen hoc concedetur tanto facilius, quia $p - 1$ ſemper par eſt. Sic v. g. numerus $91 = 7.13$; unitate minutus $= 90 = 2.45 = 3.30 = 5.18 = 6\ 15. = 9.10$, factores 2, 3, 6 quidem habet communes cum $7 - 1$, $13 - 1$ præter 12, nanciſcitur tamen Factores novos 9, 10, 15, 18, 30, 45, nunquam formaturos periodum.

Hinc nova naſcitur methodus, ſimplicior præcedente, inquirens periodos diviſorum altiorum radici quadratæ de $pq - 1$ aut proximas, aut eam excedentes. Methodum hoc efficiendi oſtendam alibi, ſpe fretus, illam ad deſideria hæc inquirentium quam proxime acceſſuram.

Tab. VII. VIII. IX. paginarum licuit in Tabulas retuli [x]. Has tabulas etiam in aliis intentibus uſum ſuum habere, notum eſt omnibus, qui in negotio numerorum verſantur.

Sic v. g. dignitates de 2, 3, 5 in fractiones decimales ordinatæ, ſimul referunt dignitates de 0, $2 = \frac{1}{5}$; 0, $3 = \frac{3}{10}$; 0, $5 = \frac{1}{2}$. Et ſic in his Tabulis ſimul continentur dignitates numerorum:

4, 8, 16 etc. 0,4 ; 0,8 ; 1,6 etc.
9, 27, 81 etc. 0,9 ; 2,7 ; 8,1 etc.
25, 125, 625 etc. 2,5 etc.

poſſuntque pro libitu exſcribi et ordinari. Hoc in computatione quantitatum per ſeries infinitas multum habere uſum, per ſe clarum eſt. Sed occaſione alius Tabulæ porro hac de re tractabo.

IV.

Tabula ad Logarithmos hyperbolicos.

§. 55. Ante tempora *Nepperi* Arithmeticæ ſtudioſi invenerunt amœnam diſtractionem in comparatione ſerierum Arithmeticarum, et Geometricarum; et ſic illis, qui indignabantur ſtudiis Mathematicis, dederunt occaſionem hoc ſtudium numerandi inter inanes ſpeculationes. Nam tum quoque: *Virtus poſt nummos* progreſſui ſcientiarum oberat. Interea *Nepper* hoc nihil curavit. Comparavit ambas progreſſiones, viſurus, nihilne conferre poſſet ad amplificationem harum proprietatum. Notabilia raro ſola. Sic tandem *Nepper* invenit *Logarithmos*, et res deſiit eſſe ſpeculatio. Poterant exſpectari majora; ſed hæc prævidere non poterat *Nepper* tempore ſuo.

§. 56. Ponamus interea, *Nepperum* non inveniſſe Logarithmos; illi neceſſario apparuiſſent invento *Calculo integrali*; quia ibi Logarithmi non applicantur pro calculi compendio ſolum, ſed ut quantitates reales. Interea *Nomen Logarithmorum* per calculum in-

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[x] Salvis omnibus regula hæc non caret exceptione, mutato ſaltem caſu nota præcedente φ adducto. Syſtema conſuetum decimale de 2. 5, poſitis ex parte multiplis a, $2a$, $3a \ldots . 9a$, omnium compendiorum capax eſt, et ſic diverſi numeri non compoſiti, quando producunt ſeriem completam ſola ſubtractione examinantur quam celerrime absque duplicatione. Qua deficiente recurrendum eſt ad alia ſyſtemata, de quibus alibi.

tegralem vix locum habuiſſet; quia eſt veroſimile, futurum fuiſſe, ut introducerentur denominationes analogæ *Plano hyperbolico*, aut *Arcubus hyperbolicis*. Atque ita ſic dicta (linea) *Logiſtica*, ſi nomine omnino non caruiſſet, aliud nomen nacta fuiſſet. An computatæ fuiſſent Tabulæ Logarithmicæ, præcipue tantæ, ut hodie habentur, alia eſt quæſtio. Nam labor indefeſſus ad computandas tantas Tabulas a tempore *Nepperi*, *Briggii* et *Vlacci* multum defecit; nec facile foret invenire Editores. Bene itaque factum, quod res ita ſucceſſit, et quod Logarithmi inventi ſunt ante calculum integralem.

§. 57. Jam ut ad rem revertar, repeto Annotationem, a tempore calculi integralis Logarithmos ratione magis generali factos neceſſarios, quam *Nepper* ſibi poterat imaginari. Integrale

$$\int \frac{dx}{x}$$

et infinita alia dependentia ab hoc, multoties occurrunt in Integratione; et ſine Logarithmis multitudo Problematum utiliſſimorum et maximi momenti non fuiſſet ſoluta. Jam vero calculus integralis proprie requirit Logarithmos *hyperbolicos*, ſeu *naturales*, quos *Nepper* initio computaverat; ut ſaltem ſpecimen offerret talium Tabularum.

Cum vero tunc Logarithmi proprie ſervirent ad computationis compendium; neglectis Logarithmis *hyperbolicis* alii computati ſunt, ſpeciali formæ decimali magis competentes. Jam invento calculo integrali poterant repeti Logarithmi naturales et exponi in Tabulis. Sed Tabula Nepperiana deficit ultima nota, et ſic denuo computari debuiſſet. Ex parte etiam hoc conſolabatur nonnihil, Logarithmos naturales inveniri poſſe ex Briggianis, multiplicatis cum

2,30258 50929 94045 68401·79914 etc.

Et ſic Tabulæ Logarithmorum naturalium majores manſerunt ſine effectu.

§. 58. Modo magis admirabili proceſſit *Shervinus*. Ille exhibet in Introductione Tabularum ſuarum Logarithmos Briggianos omnium numerorum ab 1 uſque 100, et omnium primorum uſque 1100 in 60 notis decimalibus, oſtendens, quomodo illorum ope Logarithmi omnium numerorum reliquorum uſque ad 60 notas computari poſſint. Jam cum Logarithmi Briggiani proprie ſerviant ad compendium calculi, hoc intentu Shervinus penitus aberravit a ſcopo ſuo; quia in computationibus Logarithmicis pars proportionalis quaſi eadem temporis jactura invenitur, quæ requiritur ad computationem ſine Logarithmis. Ejus Tabula cum 60 notis igitur ad ſummum tum tantum bonum habet uſum, ubi numerus elevandus eſt ad altas dignitates, et productum deſideratur accuraratius. Sed tales caſus raro occurrunt; et *Shervinus* ſemper elegiſſet melius Logarithmos hyperbolicos 60 notis expreſſos, loco Briggianorum; quia hi non tantum ad multiplicationis compendium, ſed in quantum ſunt veræ quantitates, ſerviunt, et nonnunquam accuratius deſiderantur.

§. 59. Cum interea ut plurimum ſimus contenti 7 notis decimalibus, pridem optabilis erat tabula, exhibens Logarithmos hyperbolicos eo uſque. Non cognovi tales Tabulas; ac proinde ante aliquot annos computaveram hos Logarithmos ab 1 uſque 100, ut Tab. XIII. inveniuntur Tabula XIII. Jam cum inveniendi eſſent Logarithmi numerorum altiorum, adhibui diverſa ſubſidia, mutata pro circumſtantiis. Nam cum eſſet datus numerus *a* compoſitus, erat ſumma Logarithmorum factorum de *a* æqualis Logarithmo de *a*. Dum hoc non ſuccederet, tentavi cum $a \pm 1$. Cumque hoc ſuccederet, invento Logarithmo de $a + 1$ aut $a - 1$, Logarithmi de $a \pm 1$ Tab. XII. inveniebantur ope formulæ Tabulæ XII. Cumque $a > 100$, inveni

$$\text{log. } a = \text{log. } (a + 1) - \frac{2}{2a + 1}$$

uſque ad 7 et amplius notas decimales ſatis accurate; atque inde tam accurate ut deſiderabam. Sic v. g. ſi Log. hyperb. de 34651 ſit inveniendus, eſt

$$34650 = 10.\ 5.\ 9.\ 7.\ 11 = 10.\ 45\ 77.$$

$$\begin{aligned} \text{log. } 10 &= 2{,}3025851 \\ \text{log. } 45 &= 3{,}8066625 \\ \text{log. } 77 &= \underline{4{,}3438054} \\ \text{log. } 34650 &= \underline{10{,}4530530} \end{aligned}$$

Tandem eſt

$$\begin{aligned} \text{log. } \frac{34651}{34650} &= \text{log. } \left(1 + \frac{1}{34650}\right) = \frac{2}{69301} \\ &= 0{,}0000289 \\ \text{log. } 34650 &= \underline{10{,}4530530} \\ \text{log. } 34651 &= \underline{10{,}4530819} \end{aligned}$$

Pari ratione inventum eſſet

$$34648 = 8.\ 61.\ 71.$$

$$\text{log. } \frac{34651}{34648} = \text{log. } \left(1 + \frac{3}{34648}\right) = \frac{6}{69299}$$

=

$$\begin{array}{rl}
 & = 0{,}0000866 \\
\log.\ 8 & = 2{,}0794415 \\
\log.\ 61 & = 4{,}1108738 \\
\log.\ 71 & = \underline{4{,}2626799} \\
\log.\ 34651 & = 10{,}4530818
\end{array}$$

Si e contrario numerus habeat fractiones decimales, v.g. 3,1415926; ponatur ejus loco v. g. 3141,5926 .... et hic millies major ſumptus eſt. Jam invenitur

$$3139 = 43 . 73;$$

$$\log. \frac{3141{,}5926}{3139{,}0000} = \log. \left(1 + \frac{2{,}5926}{3139{,}0000}\right) = \frac{5{,}1852}{6280{,}5926}$$

$$\begin{array}{rl}
 & = 0{,}0008256 \\
\log.\ \ 43 & = 3{,}7612000 \\
\log.\ \ 73 & = \underline{4{,}2904594} \\
 & \ \ \ 8{,}0524850 \\
\log.\ 1000 & = \underline{6{,}9077553} \\
\log.\ 3{,}14159\ \text{etc.} & = \underline{1{,}1447297}
\end{array}$$

§. 60 Poſtea reſcivi *Simpſonem* computaſſe Tabulam Logarithmorum hyperbolicorum. Primo intuitu videbatur extendi a 100 ad 1000; ſed attentius ſpectata tantum progreditur ab 1 uſque 10; ſed ſecundum omnes partes 100^{mas}. Et inde protendit ab 100 uſque 1000; poſito log. de 100 = 0; aut addendo ad logarithmos a Simpſone computatos

$$\log.\ 100 = 4{,}6051702.$$

Verum hoc omiſit *Simpſon*. Et cum in genere ſpectatum idem ſit, Tab. XV.
Tabulam Simpſonis hic adjeci. Ea eſt Tab. XV.

Et cum in uſu hujus Tabulæ ſæpius addendi aut ſubtrahendi veniant logarithmi de 10, 100, 1000, etc. aſſignavi hos logarithmos Tab. XIV. adjectis ſimul formulis, ſervientibus ad determinandam pro omni caſu partem proportionalem. Uſus jam eſt ſequens. Tab. XIV.

§. 61. Numerus, cujus logarithmus ope hujus Tabulæ inveniendus eſt, multiplicandus aut dividendus eſt per 10, 100, 1000, etc. niſi cadat inter 1 et 10; ut cadat inter hos limites. Ita v. g. ſi detur numerus 19300; dividatur per 10000 = 10^4, ut obtineatur 1,9300, aut 1,93; jam cum 1,93 inveniatur in Tabula, computatur

$$\begin{array}{rl} \log.\ 1{,}93 & = 0{,}6575200 \\ \log.\ 10^4 & = \underline{9{,}2103404} \\ \log.\ 19300 & = \underline{9{,}8678604} \end{array}$$

ſi e contrario quærendus eſſet logarithmus de 0,193; hic numerus per 10 multiplicandus eſſet, ut haberetur 1,93; et eſſet

$$\begin{array}{rl} \log.\ 1{,}93 & = 0{,}6575200 \\ -\log.\ 10 & = \underline{2{,}3025851} \\ -\log.\ 0{,}193 & = \underline{1{,}6450651} \end{array}$$

§. 62. Verum non evenit ſemper, ut numerus hac lege mutatus, aut talis, qui per ſe cadit inter 1 et 10 exiſtat in Tabula. In his caſibus invenienda eſt pars proportionalis. Ad hoc natura Logarithmorum hyperbolicorum per formulam (Tab. XII) compendium præbet ſpeciale

Tab. XII

$$\log.\ (a+x) = \log.\ a + \frac{x}{a+\frac{1}{2}x} + \text{etc.}$$

Quod declarabo exemplo numeri 3,1415926. Cum pro hoc numero in Tab. XIII. tantum inveniatur log. 3,14, erit

$$\begin{array}{rl} a & = 3{,}14 \\ x & = 0{,}0015926 \\ \frac{1}{2}x & = 0{,}0007963 \end{array}$$

ac proinde

$$\frac{x}{a+\frac{1}{2}x} = \frac{0{,}0015926}{3{,}1407963} = 0{,}0005071$$

$$\begin{array}{rl} \log.\ 3{,}14 & = \underline{1{,}1442227} \\ \log.\ 3{,}14159\ \text{etc.} & = 1{,}1447298. \end{array}$$

Numeri 1,8768 et 187,68, expoſiti in Tabula XII pariter exemplo ſervire poſſunt.

§. 63. Problema converſum jam eſt: *Pro dato Logarithmo hyperbolico invenire numerum.* Ad hoc ſerviunt formulæ Tab. XIV. expoſitæ

$$A - \log.\ a = b = \frac{x}{a+\frac{1}{2}x}$$

$$x = \frac{ab}{1-\frac{1}{2}b}$$

Nihilominus de dato logarithmo A, log. 10 toties ſubtrahendus; aut

aut ad eum addendus eſt, donec reſiduum aut ſumma ſit minor log. 10. Sic v. g. ſi datus logarithmus $= 5,2347383$, erit

$$\begin{array}{rl} & 5,2347383 \\ 2\log. 10 = & \underline{4,6051702} \\ A = & 0,6295681 \end{array}$$

Jam eſt

$$\begin{array}{rl} \log. 1,87 = & \underline{0,6259384} = \log. a \\ b = & 0,0036297 \end{array}$$

$$x = \frac{ab}{1 - \frac{1}{2}b} = \frac{0,0067875}{0,9981852} = 0,0068000$$

$$a = \frac{1,8700000}{1,8768000}$$

proinde eſt 1,8768 numerus, cujus logarithmus $= 0,6295681$. Et 187,68 eſt numerus dati logarithmi.

§. 64. Servire etiam poteſt ad hoc Formula Tab. X; et tunc eſt

$$e^x = \frac{2 + x}{2 - x} = 1 + \frac{x}{1 - \frac{1}{2}x}$$

formula non ſolum ſimpliciſſima, ſed etiam ſatis accurata. V. g. ſit

$$A = 0,6295681$$

ac proinde

$$\begin{array}{rl} \log. a = l. 1,87 = & \underline{0,6259384} \\ x = & 0,0036297 \end{array}$$

eſtque

$$e^x = 1 + \frac{0,0036297}{0,9981852} = 1,0036363$$

et

$$a . e^x = 1,87 . 1,0036363 = 1,8768$$

numerus, cujus logarithmus $= A = 0,6295681$. Cæterum apparet, hanc formulam cum præcedente eodem redire.

§. 65. Tabula XI ad conſtruendam Logiſticam adhiberi poteſt, et ad hunc finem eam olim computaveram. Abſciſſæ x ſunt logarithmi, et Ordinatæ e^x referunt numeros eorum, in progreſſione Geometrica. Subtangens hic eſt $= 1$. **Tab. XI.**

§. 66. In Tabula XVI, deſumpta ex cl. *Euleri Introductione in Analyſin infinitorum*, occurrunt Logarithmi hyperbolici ab 1 usque 10 in notis decimalibus 25. **Tab. XVI.**

Tab. XVII. Tab. XVII continet omnes numeros ab 1 uſque 1000, non habentes alium Factorem præter 2,3,5,7. Hinc eorum logarithmi ope Tabulæ XVI. ſola additione inveniri poſſunt. Sic numerus

$$6804 = 2^2.\ 3^5.\ 7$$

$$\begin{array}{rcl}
2 \log.\ 2 & = & 1{,}38629\ 43611\ 19890\ 61883\ 44642 \\
5 \log.\ 3 & = & 5{,}49306\ 14433\ 40548\ 45697\ 62260 \\
\log.\ 7 & = & 1{,}94591\ 01490\ 55312\ 30510\ 54639 \\
\hline
\log.\ 6804 & = & 8{,}82526\ 59535\ 15751\ 38091\ 61541
\end{array}$$

Numerus proxime major Tabula 17 eſt

$$6860 = 2^2.\ 5.\ 7^3$$

proinde

$$\log.\ 6860 = 2 \log.\ 2 + \log.\ 5 + 3 \log.\ 7. \quad ѱ$$

Si quærendus eſſet logarithmus pro numero inter 6804 et 6860 interjecto, utendum eſſet Interpolatione; quem in finem ſerviunt Tab. XII. formulæ Tab. XII. Sic v. g. eſt

$$\begin{array}{l}
\log.\ 6805 = \log.\ 6804 + \log.\ (1 + \tfrac{1}{6804}) \\
\log.\ 6806 = \log.\ 6804 + \log.\ (1 + \tfrac{1}{3402}) \\
\log.\ 6807 = \log.\ 6804 + \log.\ (1 + \tfrac{1}{2268}) \\
\log.\ 6808 = \log.\ 6804 + \log.\ (1 + \tfrac{1}{1701}) \\
\quad * \quad * \quad * \\
\log.\ 6810 = \log.\ 6804 + \log.\ (1 + \tfrac{1}{1134}), \\
\log.\ 6811 = \log.\ 6804 + \log.\ (1 + \tfrac{1}{972})
\end{array}$$

et generatim

$$\log.(6804 + a) = \log.\ 6804 + \log.\ (1 + \tfrac{a}{6804})$$

§. 67. Si vero deſideremus ſemper computare cum numeris integris, res redit ad hoc problema: *Ut exprimatur quævis quantitas per ſeriem fractionum, ſe multiplicantium, et ubi quivis numerator a ſuo denominatore differt unitate.* Cumque hoc ſuccedat diverſis modis deſideratur inſuper, *ut hæ fractiones inter omnes poſſibiles citiſſime convergant.* Modus procedendi, quo ſatisfit huic problemati, optime declarabitur exemplis.

§. 68. Sit v. g. Fractio

$$\frac{9293}{9216}$$

ѱ Videatur nota * ad §. 26.

mu-

mutanda in talem ſeriem fractionum. Cum hæc fractio ſit

$$\frac{9293}{9216} = 1 + \frac{77}{9216}$$

dividatur 9216 per 77, et eſt Quotus paulo minor quam 120. Jam

$$\begin{array}{l r l} \text{addatur ad} & \ldots\ldots \quad 9216\ \ldots & = A \\ & \text{valor } \frac{2916}{120} = \quad 76{,}8 & \\ \cline{2-2} & 9292{,}8 & = B \\ \text{hæc ſumma ſubducta de} & 9293{,}0 & \\ \cline{2-2} \text{dat Reſiduum} & 0{,}2 & = C. \end{array}$$

Jam eſt $\frac{B}{C} = \frac{92928}{2} = 46464.$

Atque inde obtinetur $\frac{9293}{9216} = \frac{121}{120} . \frac{46465}{46464}$

ac proinde

$$\log. 9293 = \log. 9216 + \log. \left(1 + \frac{1}{120}\right) + \log. \left(1 + \frac{1}{46464}\right)$$

§. 69. Hæc computatio etiam peragi poteſt ratione ſequente; ponatur

$$\frac{9293}{9216} + \frac{x+1}{x}$$

erit

$$1 + \frac{77}{9216} = 1 + \frac{1}{x}$$

ac proinde cum x deſideretur in numeris integris,

$$x = 120.$$

Jam ponatur porro

$$\frac{9293}{9216} = \frac{121}{120} . \frac{y+1}{y}$$

erit

$$\frac{9293 . 120}{9216 . 121} = \frac{y+1}{y}$$

Jam cum

$$\frac{9293. 120}{9216. 121} = \frac{(9216 + 77). 120}{9216. (120 + 1)} =$$

$$\frac{9216. 120 + 77. 120}{9216. 120 + 1. 9216}$$

$$= 1 + \frac{77. 120 - 9216}{9216. 121} = 1 + \frac{24}{9216. 121}$$

$$= 1 + \frac{1}{384. 121} = 1 + \frac{1}{46464}$$

eſt igitur

$$1 + \frac{1}{46464} = \frac{y+1}{y} = 1 + \frac{1}{y}$$

ſic habetur ut ante

$$\frac{9293}{9216} = \frac{121}{120} \cdot \frac{46465}{46464}.$$

§. 70. Si data quantitas habet fractiones decimales, computatio fit methodo aliquantum mutata. Sit v. g. quærendus logarithmus hyperbolicus de

$$\pi = 3{,}141592\ 653589\ 793238\ 462643, \text{ etc.}$$

Numerus proximus in Tabula XVII eſt

$$3136 = 2^6 . 7^2$$

proinde

$$3{,}136 = 2^6 . 7^2 : 10^3.$$

Et ſic eſt fractio propoſita

$$\frac{3,\ 1415926 \text{ etc.}}{3,\ 136} = 1 + \frac{0,\ 005592653 \text{ etc.}}{3,\ 136} = 1 + \frac{1}{560 +}$$

itaque

$$3{,}136 . \frac{561}{560} = 3,\ 1416$$

$$\pi = \frac{3,\ 14159265358979}{0,\ 00000734644121}$$

Porro eſt in numeris integris

$$\frac{3,\ 1416}{0,\ 00000734641021} = 427636.$$

Proinde fit

$$3,\ 1416. \frac{427635}{427636} = 3,\ 14159265356518160304558\,1$$

$$\pi = \frac{3,\ 14159265358979323846264\,3}{0,\ 00000000000246116354170\,62}$$

hic quoque rurſus eſt in numeris integris

$$\frac{3,\ 14159265356518 \text{ etc.}}{0,\ 0000000000002461 \text{ etc.}} = 127646643562 \text{ ✠}$$

Hac ratione continuari poteſt, ſi de π ſemper plura loca decimalia in computationem veniant. Hinc invenitur.

$$\pi = 3{,}136 . \frac{561}{560} . \frac{427635}{427636} . \frac{127646643563}{127646643562} \text{ etc.}$$

Eſt itaque

$$\log. \pi = 6 \log. 2 + 2 \log. 7 - 3 \log. 10$$
$$+ \log. (1 + \frac{1}{560})$$
$$+ \log. (1 - \frac{1}{427636})$$
$$+ \log. (1 + \frac{1}{127646643562}) + \text{etc.}$$

Apparet hic generatim, numeros cujusque fractionis eſſe majores quadrato proxime præcedentis, et hac ratione fractiones convergere quam celerrime.

§. 71. Jam ut ope talium Fractionum inveniantur logarithmi, ſecunda fractio continua Tabulæ XII. aptiſſima et maxime convergens eſt. Modum cum ea procedendi hic tamquam cognitum præmittere poſſum, utpote qui in compluribus ſcriptis Mathematicis et in meis Additamentis optime deductus invenitur. Sic v. g. pro $\log. (1 + \frac{1}{560})$ computatio ſequens locum habet:

	Numerator 1	*Denominator* 0
560	. . . 0	 1
2	. . . 1	 560
1680	. . . 2	 1121
1	. . 3361	. . . 1883840
2800	. . 3363	. . . 1884961
$\frac{2}{3}$	. 9419761	. . 5279774640
3920	. 6283203 $\frac{2}{3}$	. . 3521734721
etc.	246395782 34 $\frac{1}{3}$	138104798 80960
	etc.	etc.

Proinde $\log. (1 + \frac{1}{560}) = \log. \frac{561}{560}$ ſecundum ordinem ſemper accuratius exprimitur per fractiones ſequentes:

$$\begin{array}{r}
1 \\ \hline
560 \\
2 \\ \hline
1121 \\
3361 \\ \hline
1883840 \\
3363 \\ \hline
1884961 \\
9419761 \\ \hline
5279774640 \\
6283203\ \frac{2}{3} \\ \hline
3521734721 \\
24639578234\ \frac{1}{3} \\ \hline
13810479880960 \\
\text{etc.}
\end{array}$$

Hæ fractiones inſuper ſunt hujus conditionis, ut differentia quarumque duarum proxime ſubſequentium faciat fractionem, cujus numerator eſt 1. Denominator vero productum utriusque Denominatoris. Hinc minimo negotio apparet, quam celeriter convergant tales fractiones. Prima pertingit usque ad ſextum locum decimalem, ſecunda usque 9^{num}, tertia usque ad 12^{mum}, quarta usque ad 15^{tum}, quinta usque ad 19^{num}, ſexta usque ad 23^{tium}, ſeptima usque ad 26^{tum}; et ſic ſemper continuatur.

§. 72. Problema converſum, nempe: *Ad datum logarithmum invenire numerum ei competentem*, ſimili ratione reſolvi poteſt. *Logarithmus itidem mutatur in ſeriem Fractionum maxime convergentium, quæ autem addendæ ſunt, et quarum numerator eſt* $= 1$, *denominatores autem numeri integri.* Modus hoc peragendi itidem occurrit in ſecundo Tomo meorum Additamentorum. Cæterum intellectu facillima eſt. Datus logarithmus ſit:

$$\begin{array}{rcll}
\log.\ \pi & = & 1{,}144729885849400174 & \text{etc.} \\
1 & = & 1 & \\ \cline{3-3}
 & & 0{,}144729885849400174 & \text{etc.} \\
\frac{1}{7} & = & 0{,}142857142857142857 & \text{etc.} \\ \cline{3-3}
 & & 0{,}001872742992257317 & \text{etc.} \\
\frac{1}{534} & = & 0{,}001872659176029962 & \text{etc.} \\ \cline{3-3}
 & & 0{,}000000083816227354 & \text{etc.} \\
\frac{1}{11931087} & = & 0{,}000000083816184402 & \text{etc.} \\ \cline{3-3}
 & & 0{,}000000000000042952 & \text{etc.}
\end{array}$$

Po-

Poſito jam duce Tabula X Tab. X.

$$\log.\ e = 1$$

eſt

$$\pi = e^{l\pi} = e^{1,1447 \text{ etc.}}$$

$$= e^1 + \frac{1}{7} + \frac{1}{534} + \frac{1}{1193087} + \text{etc.}$$

$$= e \,.\, e^{\frac{1}{7}} \,.\, e^{\frac{1}{534}} \,.\, e^{\frac{1}{1193087}} \,.\ \text{etc.}$$

Hæ expreſſiones jam ope alicujus formulæ Tab. X, quælibet pro ſe computari, et tum in ſe multiplicari poſſunt.

§. 73. Tab. XVIII. continet formulas, quæ referuntur ad Sectores hyperbolicos eodem modo, ſicut formulæ trigonometricæ ſimiles referuntur ad Sectores ſeu arcus circulares. De quibus in ſequentibus occaſione aliarum Tabularum agam fuſius. Tab. XVIII.

V.

Tabulæ Functionum Circularium.

§. 74. Initium harum Tabularum facit Tab. XIX. Ea continet ſinus de 3 ad 3 gradus in formulis Algebricis ſecundum valorem abſolutum. Et in tantum ex his non ſolum dari poſſunt rationes ſpeciales inter hos Sinus, Coſinus, Tangentes et ſecantes, etc. quam exactiſſime, ſed ſerviunt etiam in caſibus ſpecialibus ad calculos exactiſſimos, et ad Theoremata ſecundum rigorem exprimenda, quæ ope Tabularum trigonometricarum tantum ad ſeptem notas decimales determinari poſſent. Doctrina Polygonorum corporumque regularium etc. diverſa ex inde nanciſcitur emolumenta. Tab. XIX.

§. 75. Sequens Tabula XX. continet formulas, quæ ſunt Baſis omnium calculorum trigonometricorum. Uſum illius ſupponere debeo cognitum. Cæterum comparari poteſt cum ſimilibus formulis hyperbolicis Tabulæ XVIII., de quibus, ut jam annui, etiam porro ſermo erit. Tab. XX.

§. 76. Tabula XXI. repræſentat propoſitiones utiliſſimas et omnes caſus Trigonometriæ rectilineæ et ſphæricæ. Præcipue Triangula obliquangula ſecundum tenorem Theoriæ in Tomo 1. meorum Additamentorum in quatuor caſus principales diviſi ſunt. Nempe ſemper 4 partes Trianguli obliqui in calculo occurrunt; ſcilicet: Tab. XXI.

1. Aut tria latera et unus Angulus.
2. Aut tres anguli et unum latus.
3. Aut quatuor partes ſe ſubſequentes.
4. Aut quatuor partes ſibi oppoſitæ.

Hoc modo hi quatuor caſus præcipui conſpicui ſunt; et in quolibet caſu formula illi ſerviens ſemper ſine deliberatione invenitur. Ultima pagina hujus Tabulæ XXI. repræſentat caſus, in quibus, ſi computetur cum logarithmis, ducenda eſt linea perpendicularis. Hi quoque dividantur in 4 caſus, ut inveniatur formula illi ſerviens quam citiſſime.

Tab. XXII. §. 77. Tabula XXII. refert in fractionibus rationalibus aliquos calculos cyclometricos, et eorum rationes eo modo, ut quamvis nulla fractio ſit exacta, eæ tamen ſint accuratiores quam quævis alia fractio numeris minoribus expreſſa. Apparet, has fractiones repræſentari in ſeriebus, et ante quamlibet ſeriem ratio nominatim exprimitur. In tantum tres priores ſeries per ſe claræ ſunt. Reliquæ tres indigent explanatione.

Quarta refertur ad comparationem *Areæ circuli ad quadratum ei æquale*, ita, ut in quavis fractione ſit Numerator: ad Denominatorem, ut Diameter circuli: ad latus quadrati; quod æquale continet ſpatium.

Series quinta *confert globum cum cubo æqualis ſpatii*, ita ut Numerator ſit ad Denominatorem, ut Diameter ad cubi latus, globo æqualis. *Sexta comparat Cylindrum, cujus altitudo æquatur diametro, cum cubo ſpatii æqualis*; ita, ut in quavis fractione ſit Numerator ad Denominatorem, ut Diameter aut etiam altitudo talis cylindri, ad cubi latus, qui æquale ſpatium continet. Omnes hæ Fractiones ita ordinatæ ſunt, ut in qualibet ſerie ſequentes ſit accuratiores præcedentibus.

Ut igitur appareat, quam accurata quælibet ſit, ſolum ſubtrahenda eſt a proxime ſubſequente. Reſiduum ſemper erit fractio, cujus numerator = 1; denominator vero productum denominatorum ambarum fractionum. Cæterum apparet ſeriem primam inferius magis extenſam iterum occurrere.

In hac pagina porro occurrit ſeries pro circumferentia circuli, ubi in Denominatoribus numeri Romani VIII. IX. X. XIII. XIV. indicant, quot zeri adjiciendi ſint. Illa ſervit loco numerorum *Ludolphianorum* uſque ad 14 loca decimalia; et in quavis fractione cognoſcitur, quouſque extendatur.

Tab. XXIII. §. 78. Sequens Tabula XXIII. exhibet longitudinem arcuum circuli in 27 notis decimalibus ab 1 gradu uſque 100; et inde de 30 ad 30°; ſicut etiam pro minutis et ſecundis. Occurrunt non nunquam, præſertim in Aſtronomia, caſus, ubi deſideratur abſoluta arcuum longitudo, etiamſi non ad tantas decimales.

Tab. XXIV. §. 79. Tabula XXIV. vix exigit explicationem. Sunt caſus, ubi

ubi Sinus et Coſinus 5 arcuum minimorum deſiderantur accuratiſſime. Ad hoc ſumpſi pro baſi arcum de 10000 ſecundis, et *m* indicat rationem hujus arcus ad quemvis datum. Inde declaratur formula pro Sinu *U* et Coſ. *U* in prima pagina hujus Tabulæ. Altera pagina incipit cum numeris *Ludolphianis* a *Lamy* magis extenſis. Sequuntur logarithmi Briggiani pro his numeris, ſicut et pro longitudine 1 gradus, 1 minuti, 1 ſecundi etc.

Tab. XXV.

§. 80. Tabula XXV. quodammodo eſt Tabula multiplicatoria pro Sinibus graduum, quia hos Sinus per 1, 2, 3 . . . . . 9 multiplicatos in tot columnas diſtinctos offert. Hic abacus Sinuum utiliſſimus mihi fuit in computandis Tabulis Aſtronomicis, quales occurrunt in II. parte *Additamentorum*. Eadem ratione uſum habet in aliis caſibus ubi de gradu ad gradum computandum eſt.

Tab. XVI.

§. 81. Tandem etiam pro caſibus, ubi de gradu ad gradum computandæ ſunt Tabulæ, adjeci Tabulam XXVI, quæ continet generatim Functiones arcuum de gradu ad gradum. Suppono E. g. adeſſe Tabulam decimalem declinationis pro obliquitate de 23° 28′ computandam. Deſcribatur ex Tabulis conſuetis Logarithmus Sinus 23° 28′ ad ſchedulam, ita, ut poſita ad columnam Logarithmi Sinus Tabulæ, numeri omnium ſtationum juxta ſe ponantur. Hac ratione hic logarithmus ſcriptus ad ſchedulam addi poteſt ad quemvis logarithmum Tabulæ et ſumma ſcribi ſpeciatim, absque neceſſitate, quidquam aliud exſcribendi. Hæc ſchedula de gradu ad gradum protruditur, quoties aliqua ſumma notata eſt. Hoc exemplum ſufficit ad oſtendendum, quam commode iſte Abacus ſervire poſſit in aliis caſibus innumeris.

VI.

Tabulæ ad Solutionem Æquationum.

Tab. XXVII.

§. 82. PRrima harum Tabularum, quæ eſt XXVII præſefert æquationem in genere, exprimens valorem cujusque radicis *x* in forma fractionis ita, ut qui valor in hac fractione pro *y* ponitur, fractio det valorem ipſi *x* propiorem $= x'$. Hæc formula generalis in eadem Tabula invenitur pro æquationibus 2^{i}, 3^{ii}, 4^{ti}, et 5^{ti} gradus ſeorſim expreſſa. Cæterum eam deduxi ex Methodo *Neutono-Halleijana* ad inveniendas radices approximatione; et in tantum etiam accidere poſſunt caſus, ubi *x* magis redicit ab *x'* quam *y*. Cum autem habeatur electio libera ponendi pro *y* alium valorem, hoc parum refert, ſi enim æquatio ſaltem unum habeat valorem realem, formula ſemper uſum habet. Si e contrario æquatio habet me-

meras radices imaginarias, ponendus etiam pro y valor imaginarius formæ

$$y = A + \sqrt{-B}$$

§. 83. Cum in qualibet æquatione ultimum membrum ſit productum omnium radicum, Theorema (§. 31.) ſuperius expoſitum etiam hic applicari poteſt. Si enim æquatio ſit de gradu n, ultimum membrum eſt productum ex n radicibus. Proinde extracta n.^{ta} radice ex ultimo membro, hæc cadit intra radicem æquationis, ſeu æquatio habet tam majores quam minores radices quam eſt n.^{ta} radix ultimi membri. Supponitur autem, omnes radices eſſe reales.

§. 84. Pari ratione liquet, diviſo membro penultimo per numerum radicum, et extracta ex quoto $(n-1)$.^{ta} radice, hanc radicem itidem cadere intra terminos radicum æquationis.

§. 85. Similes Poſitiones etiam inveniri poſſunt pro Coefficientibus reliquorum membrorum cujusque æquationis. Et inde declarantur formulæ in fine Tabulæ XXVII. occurrentes.

§. 86. Invento hac ratione valore, cadente intra radices datæ æquationis, poni poteſt iſte valor pro y in fractione (§. 82.) ad obtinendum valorem pro x radici æquationis propiorem. Iſte tandem rurſus ponitur pro y, et ſic continuatur, donec habeatur valor tam prope accedens, ut deſideratur.

§. 87. Habeatur v. g. Æquatio

$$x^5 - 5x^3 - 14x + 3 = 0$$

erit

$$a = c = 0$$
$$b = -5$$
$$d = -14$$
$$e = +3$$

proinde

$$x' = \frac{4y^5 - 10y^3 - 3}{5y^4 - 15y^2 - 14}$$

Cum hic $\sqrt[5]{3} = 1 + \ldots\ldots$

ſtatim poni poteſt

$$y = 1$$

hoc facit

$$x' = \frac{4 - 10 - 3}{5 - 15 - 14} = \frac{9}{24} = \frac{3}{8}$$

Si ponatur porro $y = 0,\ 3$

obtinetur $x' = 0,213\ldots\ldots$

Si ponatur $y = 0,\ 21$

obtinetur $x' = 0,21096\ldots\ldots$

etc.

Ab

Ab inde convergunt valores ſequentes celerrime. Ut autem experiamur, qua lege; fiat

$$y = x + z$$

inde obtinetur pro x' Numerator:

$$\begin{array}{l} 4y^5 - 10y^3 - 3 = 4x^5 + 20x^4z + 40x^3z^2 + 40x^2z^3 + 20xz^4 + 4z^5 \\ \qquad\qquad\qquad\qquad\qquad\qquad - 10x^3 - 30x^2z - 30xz^2 - 10z^3 \\ \qquad\qquad\qquad\qquad\qquad\qquad\qquad\qquad\qquad\qquad\qquad - 3 \end{array}$$

et Denominator

$$\begin{array}{l} 5y^4 - 15y^2 - 14 = 5x^4 + 20x^3z + 30x^2z^2 + 20xz^3 + 5z^4 \\ \qquad\qquad\qquad\qquad\qquad\qquad - 15x^2 - 30xz - 15z^2 \\ \qquad\qquad\qquad\qquad\qquad\qquad\qquad\qquad\qquad\qquad - 14 \end{array}$$

Ad Numeratorem addatur ad æquandum Coefficientem primi membri primo membro Denominaroris, data æquatio

$$0 = x^5 - 5x^3 - 14x - 3$$

et ſumma

$$\begin{array}{l} 4y^5 - 10y^3 - 3 = 5x^5 + 20x^4z + 40x^3z^2 + 40x^2z^3 + 20xz^4 + 4z^5 \\ \qquad\qquad\qquad\qquad\qquad - 15x^3 - 30x^2z - 30xz^2 - 10z^3 \\ \qquad\qquad\qquad\qquad\qquad\qquad\qquad\qquad\qquad\qquad\qquad - 6 \end{array}$$

dividatur per Denominatorem; et erit Quotus

$$x' = x + \frac{2z^2}{x} - \frac{4z^3}{x^2} - \text{etc.}$$

Inde liquet, Differentiam $z = y - x$ decreſcere ut quadratum de z, quam primum incipit eſſe $z < x$.

§. 88. Sumpto pro y numero ingenti, obtinetur

$$x' = \frac{4y^5 - \text{etc.}}{5y^4 - \text{etc.}} = \frac{4}{5}y - \text{etc.}$$

Et proinde acceditur ad radicem majorem (negativam aut poſitivam) parte $\frac{1}{5}$. Sic E. g. poſito $y = -10$, invenitur

$$x' = \frac{-390003}{+48486} = -8\ldots$$

Obſervatur ſimul hic, y poni poſſe notabiliter minus. Poſito $y = -5$, obtinetur

$$x' = \frac{-11253}{+2736} = -4,11\ldots.$$

quod itidem non differt multum a ratione $y : x = 5 : 4$. Poſito vero $y = -2$; invenitur

$$x' = \frac{-51}{+6} = -8,5.$$

Hic proinde eſt caſus, ubi x' a valore radicis recedit. Inde conſequitur, æquationem inter -5 et -2 habere unam realem aut impoſſibilem (imaginariam) radicem. Poſito proinde $y = -3$, habetur

$$x' = \frac{-705}{+256} = -2,7\ldots$$

Et poſito $y = -2,7$, invenitur $x' = -2,67\ldots.$ Atque inde hic ſe offert radix realis.

Tab. XXVIII. XXIX. §. 89. Ne his diutius immorer, convertor ad ſequentes duas Tabulas. XXIX exhibet in numeris, quod offert XXVIII in formulis et exemplis. Ambæ pertinent ad *æquationes cubicas*, quarum omnes radices ſunt reales. Talis æquatio generatim ſit, quæ ſequitur:

$$o = z^3 + Az^2 + Bz + C.$$

Expungatur membrum ſecundum, ut habeatur forma

$$o = y^3 + * - \beta y + \gamma$$

Jam ponatur

$$y = x.\sqrt{\beta}$$

mutatur hæc æquatio in hanc

$$o = x^3 - x + \gamma : \beta\sqrt{\beta}.$$

Et poſito

$$\gamma : \beta.\sqrt{\beta} = \pm a$$

obtinetur ſemper aut

$$x - x^3 = a.$$

aut

$$x^3 - x = a.$$

Et hæ ſunt duæ formulæ Tabulæ XXVIII, et in genere duo diverſi caſus, *ubi omnes radices eſſe poſſunt reales.*

§. 90. In quantum vero omnes tres radices reales ſunt, hoc ſimpliciter dependet a valore de a. Hoc intento differentientur ambæ æquationes *ad determinandum maximum valorem poſſibilem pro a.* Et tum obtinetur

$$dx - 3x^2dx = o$$

proinde

$$x = \sqrt{\tfrac{1}{3}} = \text{tang. } 30° = 0,5773503\ldots$$

Quo valore poſito in ambabus æquationibus obtinetur:

$$\pm a = \sqrt{\tfrac{4}{27}} = \tfrac{1}{3}\sqrt{\tfrac{4}{3}} = \tfrac{1}{3}\,\text{ſec. } 30° = 0,3849002\ldots$$

Et ita poſſibilitas trium radicum realium in terminis de $a = \pm 0,3849002\ldots$ comprehenditur.

§.

§. 91. In hoc fundatur jam Tabula XXIX, referens pro quovis valore de a radices ad ambas æquationes pertinentes

$$x - x^3 = a$$
$$x^3 - x = a$$

ita, ut 3 valores de x ſola evolutione valoris de a haberi poſſint, ſi contenti ſimus tribus notis decimalibus.

§. 92. Si vero x deſideretur in 7 decimalibus, res redit ad aptam interpolationem, quam declarabo exemplo Tabula XXVIII propoſito. Sit proinde æquatio:

$$z^3 - 3z - 1 = 0$$

ponatur $z = x\sqrt{3}$

et habetur $x - x^3 = 0,1924501 = a.$

Hinc pro tenore Tabulæ XXVIII duæ radices minores ſunt affirmativæ, major negativa.

§. 93. Jam invenitur in Tabula XXIX valor de

$$a = 0,1924501$$

in tribus locis diverſis

1.° intra $x = 0,200$ et $x = 0,201$
2.° intra $x = 0,884$ et $x = 0,885$
3.° intra $x = 1,085$ et $x = 1,086.$

Poſſunt itaque hi tres valores de x conſiderari ut termini trium radicum.

§. 94. Poſito jam pro prima harum radicum

$$x = 0,2 + n$$

obtinetur

$$0,192 + 0,88\,n - 0,6\,n^2 - n^3 = 0,1924501.$$

Jam cum hic $n < \frac{1}{1000}$, et inde $n^3 < \frac{1}{10000000000}$, iſta expreſſio ſine ſcrupulo omitti poteſt. Itaque mutatur Aequatio in

$$0,88\,n - 0,6\,n^2 = 0,0004501$$

unde conſequitur

$$n = \frac{0,0004501}{0,88 - 0,6.n} = 0,0005118$$

$$x = 0,2005118.$$

Eædem expreſſiones inveniuntur in exemplo propoſito in Tabula XXVIII, hoc ſolo diſcrimine, quod ibi primæ, et ſecundæ differentiæ trium valorum de a ſibi ſubſequentium adhibeantur, ut inveniatur æquatio

$$1920000 + 8800\,n - 6n^2 = 1924501.$$

Apparet, idem eſſe; ſolum uſus differentiarum contrahit calculum.

§. 95. Sit $\pm a = \sqrt{\frac{4}{27}}$, habentur duæ radices æquales:

$$\pm x - \sqrt{\tfrac{1}{3}} = 0$$

$\pm x - \sqrt{\tfrac{1}{3}} = 0$; et tertia radix tandem eſt:

$$\pm x - \sqrt{\tfrac{4}{3}} = \text{ſec. } 30^\circ = 1{,}1547005.$$

Apparet etiam inde, quare Tabula tantum extendatur usque

$$\pm x = 1{,}155.$$

Potuiſſet quidem continuari, et quidem in infinitum. Verum tum debuiſſet alicubi interrumpi; hinc præſtabat, eam tantum eo usque extendere, quousque caſus trium radicum poſſibilium locum habet. Et hoc intuitu Tabula jam habet quidquam abſolutum, et completa eſt in genere ſuo.

Tab. XXX. §. 96. Tabula XXX itidem attinet æquationes cubicas, et quidem omnia earum genera. Primum eſt, ubi omnes tres radices ſunt poſſibiles; et hæc ſemper per triſectionem arcus circuli ſolvi poteſt. Res redit ad 4 formulas, quæ abolito ſecundo æquationis membro monſtrant computationes porro neceſſarias. Hæ quatuor formulæ inveniuntur in prima repartitione Tabulæ. Datur v. g. æquatio:

$$z^3 - 3z - 1 = 0$$

eritque

$$a = 3$$
$$b = 1$$
$$c = 2$$
$$\text{coſ. } 3\,\omega = \tfrac{1}{2} = 0{,}5000000$$
$$3\,\omega = 60^\circ, = 60^\circ + 360^\circ, = 60^\circ + 720^\circ$$
$$\omega = 20^\circ, = 140^\circ, = 260^\circ$$
$$z = 2 \text{ coſ. } 20^\circ, = 2 \text{ coſ. } 140^\circ, = 2 \text{ coſ. } 260^\circ$$

proinde tres radices:

$$z = + 2 \text{ ſin. } 70^\circ = + 1{,}8793852 \ldots$$
$$z = - 2 \text{ ſin. } 50^\circ = - 1{,}5320888 \ldots$$
$$z = - 2 \text{ ſin. } 10^\circ = - 0{,}3472964 \ldots$$

Inde liquet, eſſe

$$\text{ſin. } 10^\circ + \text{ſin. } 50^\circ = \text{ſin. } 70^\circ.$$

Summa enim trium radicum eſt $= 0$. Cæterum in hac æquatione apte ſucceſſit, ut coſ. $\omega = \frac{1}{2}$ inveniatur exacte in Tabula. In plurimis caſibus autem hoc non evenit; et tum arcus $3\,\omega$ non ſolum in gradibus et minutis, ſed etiam in ſecundis et eorum decimalibus inquirendus eſt; ſi deſideretur valor de z accurate usque ad 7 loca decimalia.

§. 97. Altera Repartitio Tabulæ XXX. itidem attinet æquationem

$$0 = z^3 - a z - b$$

pro iis caſibus, ubi unam ſolum habet radicem poſſibilem. Hoc ſemper inde liquet, quando invenitur

$$\text{coſ.}\ 3\,\omega = \frac{4\,b}{r^3} > 1.$$

Cum enim nullus Coſinus $>$ radio, qui hic $= 1$; nihil conſequimur *triſectione arcus circuli.* E contrario triſectione Sectoris *hyperbolici* utique aliquid obtineri poteſt; quia Coſ. hyperb. ſemper eſt > 1. Hinc etiam in ſecunda repartitione Tabulæ expreſſio $4\,b : r^3$ comparatur cum Coſino hyperbolico.

Quid ſint Sinus et Coſinus hyperbolici liquet ex Tab. XXXIII, ubi comparatio Hyperbolæ æquilateræ cum circulo reſpectu functionum ſimilium occurrit. Eodem ſubſidio comprehenditur etiam Tabula XVIII. ſuperius (§. 73. 75) allegata, ubi brevitatis ergo ponitur: Tabula XXXIII

S. h. idem ac Sinus hyperbolicus
Coſ. h. . . . . Coſinus hyperbolicus
Tang. h. . . . . Tangens hyperbolica.

Hæ functiones ſemper reducuntur ad Sectorem hyperbolicum, cujus generis eſt Q C *q* Q. Angulus *q* C Q communis eſt Hyperbolæ cum circulo; e contrario angulum P C Q vocavi tranſcendentem, quia in hoc ſubſiſtit comparatio Circuli et Hyperbolæ. Nam

1. *Sinus hyperbolicus* $p\,q$ = P Q; *et* P Q eſt *Tangens anguli transcendentis* P C Q.

2. Q T *Tangens eſt anguli communis* T C Q. Cum autem Q T = R S; et R S ſit Sinus *anguli transcendentis* P C Q; liquet etiam inde, quomodo hic angulus ducat a Circulo ad Hyperbolam. Tab. XII

3. Denique eſt *Coſinus hyperbolicus* C p = C P; et C P *eſt Secans anguli transcendentis* P C Q.

§. 98. Poſito proinde angulo transcendente pro baſi, ut ſit in Tab. XXXII; tantum conſideretur: Tabula XXXII

Tang. P C Q ut Sin. hyp. q C Q q,
Sec. P C Q ut Coſ. hyp. q C Q q,
Sin. P C Q ut Tang. hyp. q C Q q = Tan. ang. q C Q.

Et hæ functiones hyperbolicæ ſtatim ex Tabulis Trigonometricis jam computatis exſcribi poſſunt. Sector q C Q q invenitur, biſecto *angulo transcendente* P C Q; dimidio addito ad 45°, et ſumpto Logarithmo Tangentis hujus ſummæ. In Tabula XXXII. ad hoc tantum adhibui Logarithmos tabulares *Briggii.* Cumque hæc Tabula tantum progrediatur de gradu ad gradum, proprie tantum ſervit

vit

vit pro forma Tabulæ quæ progredi deberet de minuto ad minutum.

Tabula XXX §. 99. Jam ut revertamur ad ſecundam Repartitionem Tab. XXX, adducam pro exemplo æquationem

$$x^3 - 3x - 4 = 0$$

Hic proinde eſt $a = 3$

$b = 4$

ideoque $r = 2$

$$\frac{4b}{r^3} = 2 = \text{Coſ. hyp. } 3\,\omega$$

Huic Coſ. hyp. $= 2$ reſpondet in Tab. XXXII.

Sector $\omega\,3 = 0{,}5719475$

ac proinde pars tertia Sector $\omega = 0{,}1906492$

huic Sectori rurſus reſpondet

Coſ. h. $\omega = 1{,}0979133$

et inde eſt

$x = r.$ Coſ. h. $\omega = 2{,}1958266$

radix quæſita et unica poſſibilis datæ æquationis.

§. 100. Cum functiones hyperbolicæ itidem ſint functiones circulares (§. 98.) facile intelligitur, hanc æquationem etiam reſolvi potuiſſe per functiones circulares; verum paulo longinquius. Interea repræſentat tertia repartitio Tab. XXX. formulas ad hoc neceſſarias. Inde apparet, ibi extrahi debere radicem cubicam, ampliusque requiri transformationem in ſecunda repartitione ſuperfluam.

§. 101. Reſtat tandem tertius caſus, ubi

$$0 = z^3 + az - b$$

Iſte caſus exibetur in quarta et quinta repartitione; in quarta adhibentur Sinus hyperbolici; in quinta autem functiones circulares, ubi autem extrahenda eſt radix cubica. Hoc vero intellectis præmiſſis jam non indigebit explicatione ulteriore.

Tabula XXXIV §. 102. Convertor itaque ad Tabulam XXXIV, quæ repræſentat in tribus repartitionibus *diverſos caſus æquationum biquadraticarum.* Prima repartitio continet ſolutionem harum æquationum ope *triſectionis arcus circularis.* Conditiones, ut patet ex formulis, ſunt:

1. $AA + 12C$ eſſe *quantitatem poſitivam.* Niſi hoc ſit, reciditur in repartitionem tertiam. Si vero ſit

2. Expreſſio

$$\frac{D}{r} < 1$$

ſit

ſit oportet. Si enim $D : r > 1$, deveniretur ad ſecundam repartitionem.

Jam ſi ambæ hæ conditiones locum habeant; prima repartitio ſemper dat ſolutionem æquationis, radices ſint poſſibiles, vel minus. Cæterum hanc operationem in ſecundo Tomo meorum Additamentorum fuſius pertractavi.

§. 103. Ex dictis ultimo loco ſimul liquet, quando recidatur ad repartitionem ſecundam vel tertiam. Apparet, in ambobus occurrere triſectionem Sectoris hyperbolici, qui in ſecunda repartitione per ſuum Coſinum, in tertia per ſuum Sinum determinatur. Porro hæc Tabula non requiret explicationem. Solum ad hunc, aliosque intentus optandum eſſet, ut Tabula XXXII computata eſſet de minuto ad minutum. Illa ſervire poſſet cum magnis emolumentis, usque adeo in computationibus Geometricis, ut alibi demonſtrabo fuſius.

Tabula XXXII.

VII.

Tabulæ ad Extractiones Radicum.

§. 104. RAdices quadraticæ præcipue ob Theorema *Pythagoricum* uſitatiſſimæ ſunt. Cubicæ ut plurimum in Stereometria; altiores multo rarius occurrunt. Propterea in Tabula XXXV propoſui numeros quadratos, et in 36ta numeros cubicos; et quidem brevitatis ergo ſolum ab 1 usque 1000 ita ut in compendioſa forma reliquis Tabulis adjungi poſſent. ω. Ampliores inveniuntur apud *Ludolphum*, et *Buchnerum*.

Tabula XXXV

Tabula XXXVI

§. 105. Tabula XXXIV. continet in prioribus duabus repartitionibus aliquas expreſſiones, quæ non exigunt explicationem. In repartitione tertia occurrit *Formula generalis*, ex qualibet quantitate invenire quamlibet radicem approximando, radice jam ad aliquem terminum deducta. Applicatio ad radices quadratas et cubicas ſimul adjecta eſt. Formula generalis, ſicut et hæ duæ ſpeciales proprie ſunt ſeries infinitæ, progredientes ſecundum dignitates de ($p : a$). Sed adhibetur tantum membrum primum, et tum ſervit ſecundum ad indicandum, quousque deveniatur quovis paſſu per primum. Sic v. g. quando

$$\frac{p}{a} < 0,000001$$

Tabula XXXIV

ω Tabula primarum decem Potentiarum ab 1 usque 1000 ad diverſos uſus accommodatiſſima incendio periit, ſed reſtaurabitur Fautorum benevolentia.

fit

$$\left(\frac{p}{a}\right)^3 < 0,000000000000000001$$

et eo usque, immo ad 2 aut 3 loca decimalia amplius tum primum membrum eſt exactum. Jam ope logarithmorum inveniri poteſt quævis radix usque ad 6 aut 7 locum decimalem, et tandem ope harum formularum extendi ad 18 usque loca decimalia. Res redit, ut apparet, ſemper ad Regulam Trium. Modus procedendi partim liquet ex ipſis formulis; partim declaravi in Tomo II. Additamentorum exemplo radicis cubicæ de $\frac{1}{6}\pi$ Tabula XXIV. occurrentis, quam ope talis Regulæ trium computavi usque ad 18 notas decimales. Tabula XXIV

§. 106. Si vero paucioribus decimalibus ſimus contenti, adhiberi poſſunt reſpectu radicum quadraticarum et cubicarum duæ ultimæ repartitiones Tabulæ XXXIV præter Tabulam XXXV. et XXXVI. Sit v. g. extrahenda radix cubica ex numero

$$2284322013.$$

Scribatur hujus numeri loco minor tribus decimalibus

$$2284322,013$$

tum eſt in Tabula XXXVI. Cubus proxime minor

$$131^3 = 2248091$$

qui ſubtractus dat reſiduum

$$36231,013$$

proinde eſt

$$\begin{aligned} a^3 + b &= 2284322,013 \\ a^3 &= 2248091. \\ b &= 36231,013 \\ a &= 131 \end{aligned}$$

et

$$x = \frac{36231,013}{393.} \cdot \frac{1}{131 + x + xx : 3a.}$$

Jam eſt primo

$$\frac{36231,013}{393} = 92,19087 \ldots.$$

Proinde

$$\frac{92,19087}{131} = 0,7037 \ldots.$$

$$\frac{92,19087}{131,7037} = 0,69998 \ldots.$$

$$\frac{92,19087}{131,7\ldots} = 0,7\ldots\ldots$$

igitur
$$x = 0,7$$
$$a + x = 131,7.$$

Et radix quæſita $= 1317$, quæ hoc in exemplo præſefert exacte radicem cubicam de 2284322013.

§. 107. Formula
$$x = \frac{b}{3a}\cdot\frac{1}{a + x + xx : 3a}$$

x exprimit exacte; ac proinde applicari poteſt, quousque libuerit. Si autem radix cubica ſolum deſideretur ad 6, aut 7 notas decimales, ſumi poteſt ſimplicius
$$x = \frac{b}{3a}\cdot\frac{1}{a + x.}$$

Extrahenda ſit radix cubica ex
$$45873642 = a^3 + b.$$

Cubus proxime minor eſt
$$a^3 = 357^3 = 45499293$$

proinde differentia
$$b = 374349.$$

Jam eſt
$$\frac{b}{3a} = \frac{374379}{1071} = 349,53221\ldots\ldots$$

et
$$\frac{349,53221}{357} = 0,97\ldots$$
$$\frac{349,53221}{357,97} = 0,9764\ldots\ldots$$

Ac proinde radix quæſita
$$= 357,9764\ldots\ldots$$

Cæterum hic æque apte ſumi potuiſſet Cubus proxime major
$$a^3 = 358^3 = 45882712$$

quia hic a dato numero minus differt. Inde fuiſſet
$$b = -9070$$
$$\frac{b}{3a} = -\frac{9070}{1074} = -8,445065\ldots\ldots$$

$$\frac{-8,445065}{358} = -0,0235\ldots$$

$$\frac{-8,445065}{357,9765} = -0,023591.\ \text{et.}$$

et in radice $= 357,976409.$

Hi duo modi inquirendi radices documento ſunt, in quantum compendia calculi in his adhibita uſum habere poſſint.

VIII.

Tabula Numerorum Figuratorum.

§. 108. Hanc Tabulam non extendi amplius, quam admiſit ſpatium duarum columnarum octavi. Interea, in quantum extenditur, uſum habebit opportunum; quia plurimi ſunt caſus, ubi prodeſt præſentia numerorum figuratorum. Doctrina computandi veroſimilitudines illi ut plurimum innititur. Eodem modo utiliſſima eſt ad determinandos Coefficientes; ſicut etiam continet coefficientes formulæ binomialis *Neutoni*. Hæc Tabula eſt Triangulum *Paſchalis*; et reſpici poſſunt multæ proprietates notabiles illius *in Arte conjectandi* Jac. Bernoully. Hic ſufficiet, eam etiam inter reliquas tabulas hic oblatas contineri.

Cæterum æquationes numerorum cujusque columnæ ſunt:

I. x

II. $x.\frac{x+1}{2}$

III. $x.\frac{x+1}{2}.\frac{x+2}{3}$

IV. $x.\frac{x+1}{2}.\frac{x+2}{3}.\frac{x+3}{4}$

etc.

Pari ratione etiam ſe manifeſtant, ſi fractiones

$$\frac{1}{1-x},\ \frac{1}{(1-x)^2},\ \frac{1}{(1-x)^3},\ \frac{1}{(1-x)^4}\ \text{etc.}$$

reſolvantur in ſeries infinitas; item ſi a quantitatibus in ſeriem ordinatis $a, b, c, d, e,$ *etc.* ſumantur primæ, ſecundæ, tertiæ, etc. differentiæ; v. g. cum ſummis.

a				
b	$a+b$			
c	$b+c$	$a+2b+c$		
d	$c+d$	$b+2c+d$	$a+3b+3c+d$	
e	$d+e$	$c+2d+e$	$b+3c+3d+e$	etc.
f	$e+f$	$d+2e+f$	$c+3d+3e+f$	
etc.	etc.	etc.		

aut etiam

a	a	a	a
b	$a+b$	$2a+b$	$3a+b$
c	$a+b+c$	$3a+2b+c$	$6a+3b+c$
d	$a+b+c+d$	$4a+3b+2c+d$	$10a+6b+3c+d$
e	$a+b+c+d+e$	$5a+4b+3c+2d+e$	$15a+10b+6c+3d+e$
etc.	etc.	etc.	etc.

IX.

Tabula Interpolationum.

§. 109. HÆc Tabula eſt XXXVIII, quæ in quatuor repartionibus continet caſus magis obvios, ubi interpolantur quantitates. Problema generatim hoc eſt: *Ponuntur duæ Quantitates x, y eſſe hujus conditionis, ut ſi x habeat valores m, n, p, q, r,* etc. *habeatur $y = \alpha, \beta, \gamma, \delta, \varepsilon$,* etc. *Jam eſt æquatio inter x et y invenienda, quæ ſatisfaciat his conditionibus.* Quatuor caſus jam ſunt ſequentes: Tabula XXXVIII

1. $y = a + bx + cx^2 + dx^3 +$ etc.
2. $y = ax + bx^2 + cx^3 + dx^4 +$ etc.
3. $y = ax + bx^3 + cx^5 + dx^7 +$ etc.
4. $y = ax^2 + bx^4 + cx^6 + dx^8 +$ etc.

Hi quatuor caſus jam non ſunt permutandi. Ut plurimum in uſu ſunt formulæ prima et ſecunda. Quando autem adhibentur, ubi tertia aut quarta adhibenda eſſet, non devenitur cum illis tam longe, ut cum poſterioribus. Conſiderentur x ut Abſciſſæ, y ut ordinatæ lineæ curvæ. Jam ſi pro $x = 0$, ſit y aliquod Maximum vel Minimum, et curva ſibi utrinque ſimilis, converget formula quarta quam citiſſime. E contrario vero tertia hoc faciet, ſi pro $x = 0$, cadat y ad punctum converſionis (directionis) etc. Et in ambobus caſibus, ut generatim in omnibus quatuor caſibus fieri poteſt, ut nonnulli coefficientium fiant $= 0$.

§.

§. 110. Jam ſiquo in caſu occurrente formula adhibenda vere ſit finita, etiam coefficientes a, b, c, d, etc. quotquot eorum ſint, accurati determinari poſſunt. In caſu oppoſito in quolibet deerit quidquam. Et tum tantum curandum eſt, ut error ſit minimæ notæ. Hoc fit, quando valores pro x ſumpti: m, n, p, q, r, etc. magis accedunt inter ſe, et plures eorum ſumuntur ad computationem.

§. 111. Verum non quæruntur coefficientes a, b, c, etc. immediate; ſed datur ſeriei aſſumptæ alia forma, ponendo v. g. loco primæ ſeriei, hanc:

$$y = A + B\frac{x-m}{m} + C\frac{x-m}{m}\cdot\frac{x-n}{n} + \text{etc.}$$

Et tum coefficientes A, B, C, etc. ſecundum ordinem accurate determinari poſſunt, ponendo ſucceſſive $x = m, n, p, q, r$, etc. et

$$y = \alpha, \beta, \gamma, \delta, \varepsilon, \text{ etc.}$$

Prima repartitio offert coefficientes A, B, C, D tam determinatos, ut lex progreſſionis facile cognoſcatur; et ex inde, ubi neceſſe ſit, etiam definiri poſſint ſequentes. Tandem iidem hi caſus adhuc determinati ſunt pro caſu ſimpliciſſimo, ubi m, n, p, q, etc. $= 1, 2, 3, 4$, etc. Facile cognoſcitur, hic occurrere coefficientes formulæ binomiæ *Neutonianæ*. Idem valet de ſecunda repartitione.

§. 112. In repartitione tertia et quarta, ubi Exponentes de x ſemper creſcunt per 2, convenienter huic circumſtantiæ etiam aſſumptæ ſunt ſeries:

$$y = Ax + Bx.\frac{xx-mm}{mm} + \text{etc.}$$

$$y = Ax^2 + Bx^2.\frac{xx-mm}{mm} + \text{etc.}$$

Quia cum his ad duplum proceditur effectum.

Hic pro caſu, ubi m, n, p, q, r, etc. $= 1, 2, 3, 4, 5$ etc. ponitur, lex coefficientium non tam clare cognoſcitur. Interea ſi ulli, qui occurrunt in quarta repartitione, et qui ſunt

4				
6	15			
8	28	56		
10	45	120	210	
12	66	220	495	792
etc.				

quærantur in Tabula XXXVII, apparet, eſſe numeros figuratos ſumptos per ſaltus; ac proinde iterum numeros Formulæ binomiæ Neutonianæ. Diviſores: 12, 90, 560, 3150, 16632 ſunt

$$\begin{array}{rcl} 12 & = & 3.\ 4. \\ 90 & = & 6.\ 15. \\ 560 & = & 10.\ 56. \\ 3150 & = & 15.\ 210. \\ 16632 & = & 21.\ 792. \end{array}$$

Ac proinde producta numerorum Trigonalium 3, 6, 10, 15, 21, etc. et ultimorum coefficientium 4, 15, 56, 210, 792, etc.

§. 113. In tertia repartitione ſunt coefficientes

2
4 5
6 14 14
8 27 48 42
etc.

Hi quidem non inveniuntur in Tabula immediate; ſed facillime inde deduci poſſunt. Nam

1. Numeri Trigonales ſumpti per ſaltus: 6, 15, 28, etc. quilibet unitate minutus, exhibent hic columnam ſecundam 5, 14, 27, etc.

2. Tandem pro tertia columna eſt

$$\begin{array}{rcl} 14 & = & 20 - 6 \\ 48 & = & 56 - 8 \\ \text{etc.} \end{array}$$

Ac proinde tertia columna continet differentias numerorum pyramidalium & purorum itidem ſumptorum per ſaltus. Tertia columna continet differentias columnarum quartæ et ſecundæ, Tabulæ XXXVII, quæ itidem ſunt ex formula binomia *Newtoni*. Sic v. g. eſt

$$\left.\begin{array}{r} (1-1)^8 = 1 - 8 + 28 - 56 + 70 - 56 \\ - 1 + 8 - 28 + 56 \\ \hline 1 - 8 + 27 - 48 + 42. \end{array}\right| \text{etc.}$$

Et ita porro

$$\left.\begin{array}{r} (1-1)^{10} = 1 - 10 + 45 - 120 + 210 - 252 + 210 \\ - 1 + 10 - 45 + 120 - 210 \\ \hline 1 - 10 + 44 - 110 + 165 - 132 \end{array}\right| \text{etc.}$$

Diviſores 6, 30, 140, 630, etc. ſunt producta ex numeris Trigonalibus 3, 6, 10, 15, etc, et ultimis coefficientibus 2, 5, 14, 42, etc.

X.

X.

Tabula Dignitatum Serierum infinitarum.

Tab. XXXIX

§. 144. Ubi computandum eſt cum ſeriebus infinitis, ſæpe occurrunt caſus, ubi ſeries elevanda eſt ad Dignitates. Cumque hoc ſit labor longinquus, commodum eſt, ſi res tota computata ob oculos habeatur. Hoc præſefert Tabula XXXIX, reſpectu duarum ſerierum

$$y = a + bx + cx^2 + dx^3 + ex^4 + \text{etc.}$$
$$y = x + ax^2 + bx^3 + cx^4 + dx^5 + \text{etc.}$$

Interea uſus hujus Tabulæ ad hoc ſolum non reſtringitur, ſed tendit ad omnes ſeries, quæ facile mutari poſſunt in unam earum. Sic v. g. ſit ſeries

$$y = a + bz^2 + cz^4 + dz^6 + ez^8 + \text{etc.}$$

elevanda ad dignitates; poni poteſt

$$z^2 = x$$

et adhiberi poterit prima pagina Tabulæ.

§. 115. Pari ratione ſi detur

$$y = az + bz^3 + cz^5 + dz^7 + \text{etc.}$$

elevanda ad dignitates, ponitur itidem

$$z^2 = x$$

et habebitur

$$y : z = a + bx + cx^2 + dx^3 + \text{etc.}$$

Quæ eſt ſeries primæ paginæ Tabulæ. Proprie id agendum, ut coefficientes quorumvis membrorum dignitatum ſtatim excribi poſſint. Exponentes determinantur, poſito iterum z pro x, nullo negotio.

§. 116. Sit ſeries

$$y = z^2 + az^4 + bz^6 + cz^8 + \text{etc..}$$

Itidem ponitur

$$z^2 = x$$

et obtinetur

$$y = x + ax^2 + bx^3 + \text{etc.}$$

Series ſecundæ paginæ Tabulæ.

§.

§. 117. Detur

$$y = z + az^3 + bz^5 + cz^7 + \text{etc.}$$

Ponitur rurſus $z^2 = x$

et inde habetur

$$yz = x + ax^2 + bx^3 + cx^4 + \text{etc.}$$

Quæ itidem eſt ſeries paginæ ſecundæ Tabulæ.

§. 118. Sit

$$y = Ax + Bx^2 + Cx^3 + Dx^4 + \text{etc.}$$

fiat

$$y : A = x + \frac{B}{A} x^2 + \frac{C}{A} x^3 + \frac{D}{A} x^4 + \text{etc.}$$

$$= x + ax^2 + bx^3 + cx^4 + \text{etc.}$$

Et exſcriptis dignitatibus, multiplicantur rurſus ſecundum ordinem per A, A^2, A^3, etc.

Hi jam generatim ſunt caſus magis uſitati; et ex reductionibus hic adductis facile colligitur, in quantum hæc Tabula etiam reſpectu aliarum ſerierum adhiberi poſſit.

XI.

Tabula Dignitatum partium Decimalium, ab 0,01 *usque* 1,00.

§. 119. HÆc Tabula itidem uſum habet ampliſſimum. In ſeriebus infinitis fere ſemper ſumi debet quantitas variabilis minor unitate. Si proinde habeatur ſeries

$$y = a + bx + cx^2 + dx^3 + \text{etc.}$$

cujus ope y pro quovis valore de x determinari debet; poni poteſt pro x ſecundum ordinem

$$0{,}01;\ 0{,}02;\ 0{,}03;\ 0{,}04;\ \text{etc.}$$

Et cum inveniatur tandem x, x^2, x^3, x^4, exacte, x^5, x^6, x^7 . . . . . x^{11} autem ad 8 loca decimalia in Tabula; abſoluta eſt pars moleſtiſſima computationis; quia tum ſolum multiplicandum eſt per coefficientem. Et ita computari poſſunt amplæ Tabulæ.

§. 120. Si vero y tantum ſit inveniendum pro valore determinato de x, v. g. pro $x = 0{,}34853\ldots$ computatur y pro

$$x = 0{,}34;\ x = 0{,}35;\ x = 0{,}36;\ x = 0{,}37,\ \text{etc.}$$

Et tandem ſecundum informationem Tabulæ XXXVIII ſervire poteſt Interpolatio.

§. 121. Si conſiderentur numeri primæ columnæ ut numeri integri; numeri ſecundæ, tertiæ, et quartæ columnæ continent eorum Quadrata, Cubos, et Biquadrata exacte. In columna quinta deſunt pro Quadratocubo duæ notæ ultimæ, et pro quavis potentia altiore magis duæ notæ. Ex inde diſcerni poteſt pro omni caſu, in quantum acquieſci poſſit decimalibus expoſitis. Sic v. g. ſit ex dato numero extrahenda radix quinta, ſexta, ſeptima . . . undecima, fere ſemper adhiberi poteſt hæc Tabula ad inveniendas priores duas notas radicis. Reſecandæ fere ſunt adjecto debito numero zerorum, tot notæ poſteriores, quot loca deficiunt in Tabulæ columna ad hoc adhibenda; et ſic videri poteſt, inter quales numeros incidunt notæ reliquæ. Sic v. g. ex 135 extrahenda ſit radix ſeptima, annectuntur 7 zeri; 135,0000000. Jam in columna ſeptima deſunt 6 decimales. Ac proinde reſecantur 6 zeri, et reliquæ notæ evolutæ in columna ſeptima cadunt inter

$$x = 20 \quad x^7 = 1280 \ldots .$$
$$x = 21 \quad x^7 = 1801 \ldots .$$

ita ut tandem radix ſeptima de 135 paulo major ſit quam 2,0. Hoc itaque jam ſufficit ad adhibendam formulam approximationis tertiæ repartitionis Tabulæ XXXIV, quæ offert valorem pro $n = \frac{1}{7}$.

Tabula XXXIV

$$\sqrt[7]{(a+p)} = \frac{7a+4p}{7a+3p}.\sqrt[7]{a} + \frac{4}{343}\left(\frac{p}{a}\right)^3 \sqrt[7]{a} + \text{etc.}$$

Cum jam hoc in caſu ſit

$$135 = 128 + 7 = a + p$$
$$a = 128$$
$$p = 7$$
$$\sqrt[7]{a} = 2$$

erit radix

$$\sqrt[7]{135} = \frac{264}{131} + \frac{1}{16.128.128} + \text{etc.} = 2{,}0152676 \ldots :$$

Apparet, eam per hanc primam approximationem jam multum accedere ad accurationem.

§. 122. Hæc Tabula porro exhibet dignitates numerorum ab 1 usque 10 cum decimalibus intercidentibus. Sic v. g. ſint inveniendæ dignitates de 3,1; invenitur in Tabula debita cum annotatione partium decimalium

3,1

$3,1 = 3,1$
$3,1^2 = 9,61$
$3,1^3 = 29,791$
$3,1^4 = 92,3521$
$3,1^5 = 286,292..$
$3,1^6 = 887,50....$
$3,1^7 = 2751,3......$

Loca decimalia in Tabula omiſſa, hic punctis annotata ſunt; et ita modus, ut decimales ab integris diſtinguuntur, facile conſpicitur.

Tandem hanc Tabulam ad ſolutionem Æquationum ſecundum inſtructionem Tabulæ XXVII optimi uſus eſſe, liquet ſine admonitione mea. Sic etiam pro numeris 2, 3, 5 immediate; et pro 4, 6, 8, 10, 12 etc. mediate Tabula VII, VIII, et IX adhiberi poſſunt (§. 54.)

§. 123. Tandem Tabula XLI continet Radices quadraticas numerorum ab 1 usque 100 in 7 decimalibus. Et ex his radices quadraticæ numerorum 4, 9, 16 etc. vicibus majorum facile inveniuntur; et ex eodem fundamento Radices quadraticæ de **Tab. XLI.**

$$\sqrt{\tfrac{1}{2}},\ \sqrt{\tfrac{1}{3}},\ \sqrt{\tfrac{1}{4}},\ \sqrt{\tfrac{1}{5}} \text{ etc. } \ldots\ldots \sqrt{\tfrac{1}{100}}$$

et cum his etiam

$$\sqrt{\tfrac{2}{3}},\ \sqrt{\tfrac{3}{4}},\ \sqrt{\tfrac{2}{5}},\ \sqrt{\tfrac{3}{5}},\ \sqrt{\tfrac{2}{7}} \text{ etc.}$$

Quem in finem ſerviunt duæ primæ formulæ Tabulæ XLIII. **Tabula XLIII**

Tabula XLII exhibet radices quadraticas **Tabula XLII**

$$\sqrt{2},\ \sqrt{3},\ \sqrt{4},\ \ldots\ldots \sqrt{12}$$

et cum his etiam

$$\sqrt{\tfrac{1}{2}},\ \sqrt{\tfrac{1}{3}},\ \sqrt{\tfrac{1}{4}} \ldots\ldots \sqrt{\tfrac{1}{12}}$$

in talibus fractionibus, quarum quævis poſterior eſt accuratior, et accuratio cujusque ope differentiæ a proxime ſubſequente determinari poteſt.

Reliquæ quatuor formulæ Tabulæ XLIII per ſe ſunt claræ; et reſpectu uſus ſui magnam habent connexionem cum Tabulis XLI, XLII, XXXIV, et XXXV.

I. H. LAMBERT

SUPPLEMENTA TABULARUM LOGARITHMICARUM ET TRIGONOMETRICARUM.

TAB. I.

NUMERORUM
AB UNITATE AD 102000
PROGREDIENTIUM
PER 2, 3, 5 NON DIVISIBILIUM
DIVISORES
SI QUI DANTUR
MINIMI.

TAB. I. DIVISORES

α	0	3..	6..	9..	12..	15..	18..	21..	24..	27..
1	—	7	—	17	—	19	—	11	7^4	37
7	—	—	—	—	17	11	13	7*p*	29	—
11	—	—	13	—	7	—	—	—	—	—
13	—	—	—	11	—	17	7*n*	—	19	—
17	—	—	—	7	—	37	23	29	—	11*g*
19	—	11	—	—	23	7*m*	17	13	41	—
23	—	17	7	13	—	—	—	11	—	7
29	—	7	17	—	—	11	31	—	7	—
31	—	—	—	7*i*	—	—	—	—	11*g*	—
37	—	—	7*g*	—	—	29	11	—	—	7*b*
41	—	11	—	—	17	23	7	—	—	—
43	—	7^3	—	23	11	—	19	—	7	13
47	—	—	—	—	29	7*g*	—	19	—	41
49	7	—	11	13	—	—	43	7	31	—
53	—	—	—	—	7	—	17	—	11	—
59	—	—	—	7	—	—	11*g*	17	—	31
61	—	19	—	31	13	7	—	—	23	11
67	—	—	23	—	7	—	—	11	—	—
71	—	7	11	—	31	—	—	13	7	17
73	—	—	—	7	19	11*g*	—	41	—	47
77	7	13	—	—	—	19	—	7	—	—
79	—	—	7	11	—	—	—	—	37	7
83	—	—	—	—	—	—	7	37	13	11*k*
89	—	—	13	23	—	7	—	11	19	—
91	7	17	—	—	—	37	31	7	47	—
97	—	—	17	—	—	—	7	13^3	11	—

β	1..	4..	7..	10..	13..	16..	19..	22..	25..	28..
1	—	—	—	7*f*	—	—	—	31	41	—
3	—	13	19	17	—	7	11	—	—	—
7	—	11	7	19	—	—	—	—	23	7
9	—	—	—	—	7*f*	—	23	47	13	53
13	—	7	23	—	13	—	—	—	7	29
19	7	—	—	—	—	—	19	7	11	—
21	11	—	7	—	—	—	17	—	—	7*g*
27	—	7	—	13	—	—	41	17	7*i*	11
31	—	—	17	—	11^3	7	—	23	—	19
33	7	—	—	—	31	23	—	7*f*	17	—
37	—	19	11	17	7	—	13	—	43	—
39	—	—	—	—	13	11	7	—	—	17
43	11	—	—	7	17	31	29	—	—	—
49	—	—	7	—	19	17	—	13	—	7*f*

γ	2..	5..	8..	11..	14..	17..	20..	23..	26..	29..
3	7	—	11	—	23	13	—	7q	19	—
9	11	—	—	—	—	—	7o	—	—	—
11	—	7	—	11	17	29	—	—	7	41
17	7	11	19	—	13	17	—	7	—	—
21	13	—	—	19	7l	—	43	11	—	23
23	—	—	—	—	—	—	7b	23	43	37
27	—	17	—	7k	—	11	—	13	37	—
29	—	23	—	—	—	7g	—	17	11	29
33	—	13	7b	11	—	—	19	—	—	7
39	—	7f	—	17	—	37	—	—	7g	—
41	—	—	29	7	11	—	13	—	19	17
47	13	—	7f	31	—	—	23	—	—	7
51	—	19	23	—	—	17	7	—	11	13
53	11	7	—	—	—	—	—	13	7	—
57	—	—	—	13	31	7	11b	—	—	—
59	7	13	—	19	—	—	29	7	—	11
63	—	—	—	—	7f	41	—	17	—	—
69	—	—	11	7	13	29	—	23	17	—
71	—	—	13	—	—	7f	19	—	—	—
77	—	—	—	11	7	—	31	—	—	13
81	—	7	—	—	—	13	—	—	7	11
83	—	11	—	7g	—	—	—	—	—	19
87	7	—	—	—	—	—	—	7f	—	29
89	17	19	7	29	—	—	—	—	—	7t
93	—	—	19	—	—	11	7g	—	—	41
99	13	—	29	11	—	7	—	—	—	—

β	1..	4..	7..	10..	13..	16..	19..	22..	25..	28...
51	—	11	—	—	7	13	—	—	—	—
57	—	—	—	7	23	—	19	37	—	—
61	7	—	—	—	—	11	37	7b	13	—
63	—	—	7	—	29	—	13	31	11	7
67	—	—	13	11	—	—	7	—	17	47
69	13	7	—	—	37	—	11	—	7	19
73	—	11	—	29	—	7	—	—	31	13b
79	—	—	19	13	7	23	—	43	—	—
81	—	13	11	23	—	41	7	—	29	43
87	11	—	—	—	19	7	—	—	13	—
91	—	—	7	—	13	19	11	29	—	7s
93	—	17	13	—	7	—	—	—	—	11
97	—	7	—	—	11	—	—	—	7r	—
99	—	—	17	7	—	—	—	11i	23	13

α	30..	53..	36..	39..	42..	45..	48..	51..	54..	57..
1	—	—	13	47	—	7	—	—	11	—
7	31	—	—	—	7	—	11 i	—	—	13
11	—	7 f	23	—	—	13	17	19	7	—
13	23	—	—	7 g	11	—	—	—	—	29
17	7	31	—	—	—	—	—	7 h	—	—
19	—	—	7 f	—	—	—	61	—	—	7 i
23	—	—	—	—	41	—	7 g	47	11 h	59
29	13	—	19	—	—	7	11	23	61	17
31	7	—	—	—	—	23	—	7	—	11
37	—	47	—	31	19	13	7	11	—	—
41	—	13	11	7	—	19	47	53	—	—
43	17	—	—	—	—	7 f	29	37	—	—
47	11	—	7	—	31	—	37	—	13	7
49	—	17	41	11	7	—	13	19	—	—
53	43	7	13	59	—	29	23	—	7 i	11
59	7 i	—	—	37	—	47	43	7 f	53	13
61	—	—	7	17	—	—	—	13	43	7
67	—	7 g	19	—	17	—	31	—	7 f	73
71	37	—	—	11 i	—	7	—	—	—	29
73	7	—	—	29	—	17	11	7	13	23
77	17	11	—	41	7 g	23	—	31	—	53
79	—	31	13	23	11	19	7 h	—	—	—
83	—	17	29	7	—	—	19	71	—	—
89	—	—	7 h	—	—	13	—	—	11	7
91	11	—	—	13	7	—	67	29	17 i	—
97	19	43	—	7	—	—	59	—	23	11 h

β	31..	34..	37..	40..	43..	46..	49..	52..	55..	58..
1	7	19	—	—	11 h	43	13 l	7	—	—
3	29	41	7 k	—	13	—	—	11 p	—	7
7	13	—	11	—	59	17	7	41	—	—
9	—	7	—	19	31	11	—	—	7	37
13	11	—	47	—	19	7	17	13	37	—
19	—	13	—	—	7	31	—	17	—	11 k
21	—	11	61	—	29	—	7 i	23	—	—
27	53	23	—	—	—	7	13	—	—	—
31	31	47	7 g	29	61	11	—	—	—	7 h
33	13	—	—	37	7	41	—	—	11	19
37	—	7	37	11	—	—	—	—	7 F	13
39	43	19	—	7	—	—	11	13 m	29	—
43	7	11	19	13	43	—	—	7 D	23	—
49	47	—	23	—	—	—	7 B	29	31	—

α	32..	35..	38..	41..	44..	47..	50..	53..	56..	59..
3	—	31	—	11	7 b	—	—	—	13	—
9	—	11 l	13	7	—	17	—	—	71	19
11	13 i	—	37	—	11	7	—	47	31	23
17	—	—	11	23	7	53	29	13	41	61
21	—	7	—	13	—	—	—	17	7 f	31
23	11	13	—	7 i	—	—	—	—	—	—
27	7	—	43	—	19	29	11	7	17	—
29	—	—	7	—	43	—	47	73	13	7 f^2
33	53	—	—	—	11 g	—	7	—	43	17
39	41	—	11	—	23	7	—	19	—	—
41	7	—	23	41	—	11	71	7 E	—	13
47	17	—	—	11 g	—	47	7 C	—	—	19
51	—	53	—	7	—	—	—	—	—	11
53	—	11 b	—	—	61	7 A	31	53	—	—
57	—	—	7 i	—	—	67	13	11	—	7 k
59	—	—	17	—	7 g	—	—	23	—	59
63	13	7	—	23	—	11	61	31	7	67
69	7	43	53	11	41	19	37	7 g	—	47
71	—	—	7 x	43	17	13	11	41	53	7
77	29	7 w	—	—	11 n	17	—	19	7	43
81	17	—	—	37	—	7	—	—	13 i	—
83	7 u	—	11	47	—	—	13 b	7	—	31
87	19	17	13 k	53	7	—	—	—	11 q	—
89	11 g	37	—	59	67	—	7	17	—	53
93	37	—	17	7	—	—	11	—	—	13
99	—	59	7	13 b	11	—	—	—	41	7

β	31..	34..	37..	40..	43..	46..	49..	52..	55..	58..
51	23	7 b	11 m	—	19	—	—	59	7 g	—
57	7 f	—	13 b	—	—	—	—	7	—	—
61	29	—	—	31	7 z	59	11 o	—	67	—
63	—	—	53	17	—	—	7	19	—	11 g
67	—	—	—	7 y	11	13	—	23	19	—
69	—	—	—	13	17	7 k	—	11	—	—
73	19	23	7 f	—	—	—	—	—	—	7
79	11 b	7 v	—	—	29	—	13	—	7	—
81	—	59	19	7 f	13	31	17	—	—	—
87	—	11	7	61	41	43	—	17	37	7 l
91	—	—	17	—	—	—	7 k	11 g	—	43
93	31	7	—	—	23	13 i	—	67	7 b	71
97	23	13	—	17	—	7 f	19	—	29	—
99	7	—	29	—	53	37	—	7	11	17

6000

α	60	63	66	69	72	75	78	81	84	87
1	17	—	7 k	67	19	13	29	—	31	7 f
7	—	7 h	—	—	—	—	37	11 u	7	—
11	—	—	11	—	—	7 l	73	—	13	31
13	7	59	17	31	—	11	13	7 i	47	—
17	11	—	13	—	7	—	—	—	19	23
19	13	71	—	11 h	—	73	7	23	—	—
23	19	—	37	7 k	31	—	—	—	—	11 g
29	—	—	7	13 o	—	—	—	11	—	7 l
31	37	13	19	29	7	17	41	47	—	—
37	—	—	—	7	—	—	17	79	11 g	—
41	7	17	29	11	13	—	—	7	23	—
43	—	—	7 g	53	—	19	11 k	17	—	7
47	—	11	17 k	—	—	—	7 i	—	—	—
49	23	7	61	—	11	—	47	29	7 h	13
53	—	—	—	17	—	7 g	—	31	79	—
59	73	—	—	—	7 h	—	29	41	11	19
61	11 i	—	—	—	53	—	7	—	—	—
67	—	—	59	—	13 p	7 k	—	—	—	11
71	13	23	7	—	11	67	17	—	43	7 R
73	—	—	—	19	7	—	—	11	37	31
77	59	7	11	—	19	—	—	13 h	7 Q	67
79	—	—	—	7	29	11 g	—	—	61	—
83	7 f	13	41	—	—	—	—	7 P	17	—
89	—	—	—	29	37	—	7 k	19	13	11 h
91	—	7 f	—	—	23	—	13	—	7	59
97	7 g	—	37	—	—	71	53	7	29	19

β	61	64	67	70	73	76	79	82	85	88
1	—	37	—	—	7 L	11	—	59	—	13
3	17	19	—	47	67	—	7	13	11	—
7	31	43	19	7 fg	—	—	—	29	47	—
9	41	13 h	—	43	—	7	11	—	67	23
13	—	11 r	7 I	—	71	23	41	43	—	7
19	29	7 H	—	—	13	19	—	—	7	—
21	—	—	11 g	7 h	—	—	89	—	—	—
27	11	—	7 m	—	17	29	—	19	—	7 g
31	—	59	53	79	—	13	7 f	—	19	—
33	—	7	—	13	—	17	—	—	7 k	11 w
37	17 i	41	—	31	11 k	7	—	—	—	—
39	7	47	23	—	41	—	17	7 f	—	—
43	—	17	11	—	7	—	13 q	—	—	37
49	11 g	—	17	7 i	—	—	—	73	83	—

γ	62	65	68	71	74	77	80	83	86	89
3	—	7	—	—	11	—	53	19 k	7	29
9	7	23	11	—	31	13	—	7	—	59
11	—	17	7 K	13	—	11	—	—	79	7 i
17	—	7 i	17	11	—	—	—	—	7	37
21	—	—	19	—	41	7	13	53	37	11
23	7 G	11	—	17	13	—	71	7 l	—	—
27	13	61	—	—	7	—	23	11	—	79
29	—	—	—	—	17 i	59	7 m	—	—	—
33	23	47	—	7	—	11 i	29	13	89	—
39	17	13	7	11 s	43	71	—	31	53	7
41	79	31	—	37	7	—	11 b	19	—	—
47	—	—	41	7	11	61	13	17	—	23
51	7 i	—	13 b	—	—	23	83	7	41	—
53	13 n	—	7 f	23	29	—	—	—	17	7
57	—	79	—	17	—	—	7	61	11	13 r
59	11	7	19^3	—	—	—	—	13	7	17 m
63	—	—	—	13 i	17	7	11	—	—	—
69	—	—	—	67	7 f	17	—	—	—	—
71	—	—	—	71	31	19	7	11	13 k	—
77	—	—	13 k	—	—	7 f	41	—	—	47
81	11	—	7	43	—	31	—	17 l	—	7
83	61	29	—	11	7	43	59	83	19	13
87	—	7	71	—	—	13	—	—	7 b	11 i
89	19	11	83	7 g	—	—	—	—	—	89
93	7 l	19	61	—	59	—	—	7 f	—	17 k
99	—	—	—	23	—	11	7 g	37	—	—

β	61	64	67	70	73	76	79	82	85	88
51	—	—	43	11	—	7	—	37	17	53
57	47	11	29	—	7	13 i	73	23	43	17
61	61	7 g	—	23	17	47	19	11	7	—
63	—	23	—	7	37	79	—	—	—	—
67	7	29	67	37	53	11 b	31	7	13	—
69	31	—	7	—	—	—	13	—	11 i	7 S
73	—	—	13	11	73	—	7 b	—	—	19
79	37	11 i	—	—	47	7	79	17	23	13
81	7	—	—	73	11 t	—	23	$7g^2$	—	83
87	23	13	11	19	83	—	7 O	—	31	—
91	41	—	—	7	19	—	61	—	11 v	17
93	11	43	—	41	—	7 N	—	—	13	—
97	—	73	7	47	13	43	11	—	—	7 m
99	—	67	13	31	7 M	—	19	43	—	11

TAB. I. DIVISORES

α	90	93	96	99	102	105	108	111	114	117
1	—	71	—	—	101	—	7	17	13	—
7	—	41	13	—	59	7 i	101	29	11 h	23
11	—	—	7	11 h	—	23	19	41	—	7^2
13	—	67	—	23	7	—	11	—	101	13 h
17	71	$7f^2$	59	47	17	13	29	—	7^2	—
19	29	—	—	7 g	11	67	31	—	19	—
23	7	—	—	—	—	17	79	7^2	—	19
29	—	19	—	—	53	—	7^2g	31	11	37
31	11	7 m	—	—	13	—	—	—	7 k	—
37	7	—	23	19	29	41	—	7 n	—	11^2
41	—	—	51	—	7^2f	83	37	13	17	59
43	—	—	—	61	—	13	7	11	—	—
47	83	13	11	7^3	—	53	—	71	—	17
49	—	—	—	—	37	7 f	19	—	107	31
53	11	47	7 K	37	—	61	—	19^2	13	7 k
59	—	7 T	13	23	—	—	—	—	7	11
61	13 h	11 k	—	7	31	59	—	—	73	19
67	—	17 i	7	—	—	—	—	13	—	7 o
71	47	—	19	13^2	—	11 m	7	—	—	79
73	43	7 g	17	—	—	97	83	—	7 f	61
77	29	—	—	11	43	7	73	—	23	—
79	7	83	—	17	19	71	11 k	7	13	—
83	31	11	23	67	7 g	19	—	53	—	—
89	61	41	—	7	—	—	—	67	—	—
91	—	—	11	97	41	7 h	—	19^3	—	13
97	11	—	—	13	7	—	17	—	—	47

β	91	94	97	100	103	106	109	112	115	118
1	19	7 h	89	73	—	—	11	23	7 m	—
3	—	—	31	7	—	23	—	17	—	11 l
7	7	23	17	—	11	—	13	7	37	—
9	—	97	7 i	—	13^2	103	—	11	17	7^2
13	13	—	11	17 i	—	—	7	—	29	—
19	11	—	—	43	17	7 n	61	13	—	53
21	7	—	—	11	—	13 i	67	7^2	41	—
27	—	11	71	37	23	—	7^2	103	—	—
31	23	—	37	7	—	—	17	11	13	—
33	—	—	—	79	—	7^3	13 l	47	19	—
37	—	—	7 g	—	—	11	—	17	83	7 i
39	13 i	—	—	—	7^2	—	—	—	11	—
43	41	7 i	—	11^2	—	29	31	—	7 h	13
49	7	11	—	13	79	23	—	7	—	17^2

γ	92	95	98	101	104	107	110	113	116	119
3	—	13 b	—	—	101	7 f	—	89	41	—
9	—	37	17	11	7	—	101	43	13 i	—
11	61	—	—	—	29	—	$7f^2$	—	17	43
17	13	31	—	67	11	7	23	—	—	17
21	—	—	7 k	29	17	71	103	—	—	7 g
23	23	89	11 i	53	7	—	73	13^2	59	—
27	—	7	31	13 i	—	17	—	47	7 f	—
29	11	13	—	7	—	—	41	—	29	79
33	7	—	—	—	—	—	11 b	7	—	—
39	—	—	—	—	11 g	—	7 i	17 k	103	—
41	—	7 l	13	—	53	23	61	11	7	—
47	7	—	43	73	31	11	—	7	19	13
51	11 l	—	—	—	7	13	43	—	61	17 i
53	19	41	59	11 g	—	—	7	—	43	—
57	—	19	—	7	—	31	—	41	—	11
59	47	11 x	—	—	—	7 l	—	37	89	—
63	59	73	7	—	—	47	13 k	11	107	7
69	13 k	7	71	—	19^2	11^2	—	—	7	—
71	73	17	—	7	37	—	—	83	11	—
77	—	61	7 b	—	—	13	11 i	31	—	7 l
81	—	11 g	41	—	47	—	7	19	—	—
83	—	7 n	—	17	11	41	—	—	7	23
87	37	—	—	61	—	7 k	—	59	13 l	—
89	7	43	11 l	23	17	—	13	7	—	19
93	—	53	13	—	7	43	—	—	11	67
99	17	29	19	7 m	—	—	11	—	—	13^2

β	91	94	97	100	103	106	109	112	115	118
51	—	13	7^2	19 k	11	—	47	—	—	7
57	—	7^2	11	89	—	—	—	—	7 g	71
61	—	—	43	—	13	7	97	—	11	29
63	7^2 f	—	13	29	43	—	19	7	31	—
67	89	—	—	—	7	—	11	19	43	—
69	53	17	—	—	—	47	7	59	23	11 g
73	—	—	29	7	11 k	13	—	—	71	31
79	67	—	7 f	—	97	59	—	—	—	7
81	—	19	—	17	7	11	79	29	37	109
87	—	53	—	7 f	13 b	—	—	—	—	—
91	7 g	—	—	—	—	—	29	7	67	11 k
93	29	11	7	—	19	17^2	—	23	—	7
97	17	—	97	23	37	19	7	11 g	—	—
99	—	7 k	41	—	—	13	17	—	7	73

TAB. I. DIVISORES

α	120	123	126	129	132	135	138	141	144	147
1	11	—	—	7i	43	23	37	59	—	61
7	—	31	7	—	47	13	—	—	—	7f
11	—	13	—	—	11	59	7	103	—	47
13	41	7	—	37	73	—	19	11	7l	—
17	61	109	11m	—	—	7	41	19	13	—
19	7b	97	—	—	—	11	13	7	—	41
23	11	—	13	—	7	—	23	29	—	—
29	23	—	73	7	—	83	—	71	47	11g
31	53	11i	17	67	101	7	—	13	—	—
37	—	13^2	—	17	7m	—	101	67	—	—
41	—	7o	—	—	—	11	—	79	7	—
43	—	—	47	7p	17i	29	109	—	11g	23
47	7	—	—	11^2	13	19k	61	7p	—	—
49	—	53	7g	23	—	17	11	—	—	7^3
53	17	11	—	—	29	—	7	—	97	—
59	31	17	—	—	—	7g	—	—	19	—
61	7	47	11	13	89	71	83	7^2h	—	29
67	11	83	53	—	—	—	7^2	31	17k	—
71	—	89	—	7h	23	41	11g	37	29	—
73	—	—	19k	—	13	7^2	—	—	41	11h
77	13	—	7	19	11h	—	—	—	31	7
79	47	—	31	—	7^2	37	—	11	—	—
83	43	7l	11	—	37	17^2	—	13	7	—
89	7f	13	—	31	97	107	17i	7	—	23
91	107	—	7^3	11	—	—	29	23	43	7
97	—	7^2f	—	41	—	—	13	—	7i	—

β	121	124	127	130	133	136	139	142	145	148
1	—	—	13	—	47	7l	—	11	17	19^2
3	7^2g	79	—	—	53	61	—	7	—	113
7	—	19	97	—	7	11	—	—	89	13h
9	—	—	71	—	—	31	7	13	11	59
13	—	—	—	7fg	—	—	—	61	23	—
19	—	11	7k	47	19	—	31	59	—	7l
21	17k	—	—	29	7f	53	—	—	13	—
27	67	17^2	11g	7	—	—	19	41	73	—
31	7	31	29	83	—	43	—	7i	11	—
33	11	—	7h	—	67	—	—	43	—	7g
37	53	—	47	—	—	13	7f	23	—	37
39	61	7	—	13h	—	23	53	29	7m	11i
43	—	23	—	—	11	7	73	—	—	—
49	—	59	11i	—	7	—	13l	—	—	31

γ	122	125	128	131	134	137	140	143	146	149
3	—	—	7 *m*	—	13	71	11 *i*	—	17	7
9	29	7	—	—	11 *k*	—	—	41	7	17
11	—	—	23	7	—	—	—	11	19	13 *m*
17	19	—	7	13	—	11 *l*	107	103	47	7
21	11^{2}	19	—	—	—	—	7	—	—	43
23	17	7	—	11	31	—	37	—	7	—
27	—	—	101	—	29	7 *n*	13^{2}	—	—	11 *k*
29	7	11 *h*	—	19	13	—	—	7 *k*	—	—
33	13	83	41	23	7 *i*	31	—	11	—	109
39	—	—	37	7	89	11	101	13	—	—
41	—	—	—	17	—	7 *g*	19	—	11^{4}	67
47	37	—	29	—	7 *h*	59	11	—	97	—
51	—	7 *f*	71	—	—	—	—	113	7^{2} *g*	—
53	—	—	—	7	11	17	13 *k*	31	—	19
57	7 *h*	29	13 *k*	59	—	—	—	7^{2}	—	—
59	13 *k*	19	7 *f*	—	43	—	17	83	107	7
63	—	17	19	—	—	—	7^{3}	53	11 *m*	13
69	—	—	17	13	—	7^{2}	11	—	—	—
71	7	13	61	—	19	47	—	7	17	11
77	—	—	79	—	—	23	7	11	13	17
81	—	23	11	7^{2}	13 *h*	—	—	73	53	71
83	71	—	13	—	97	7 *f*	—	19	—	—
87	11	41	7^{2}	—	—	17	—	—	19	7
89	—	—	—	11^{2}	7 *o*	—	73	—	37	13
93	19	7^{2}	—	79	103	13	17	37	7	11 *l*
99	7^{2}	43	—	67	—	—	23	7 *f*^{2}	—	53

β	121	124	127	130	133	136	139	142	145	148
51	29	—	41	31	13^{2}	11 *h*	7	—	—	—
57	—	—	—	11	19^{2}	7	17	53	—	83
61	—	17	7	37	31	19	23	13	—	7 *f*
63	—	11^{2}	—	—	7 *k*	13	—	17	—	89
67	23^{3}	7 *g*	17	73	—	79	—	11	7	—
69	43	37	113	7	29	—	61	19	17	—
73	7 *n*	—	53	17	43	11^{2}	89	7	13 *i*	107
79	19	—	13	11 *l*	17	—	7	109	61	—
81	13	7	—	103	—	—	11 *m*	—	7	23
87	7	—	19	23	11	—	71	7 *g*	29	—
91	73	—	—	13 *i*	7	—	17	31	—	—
93	89	13 *m*	11	—	59	—	7	—	—	53
97	—	—	67	7	—	—	—	17 *l*	11	—
99	11	29	—	—	—	7 *i*	—	79	13	47

TAB. I. DIVISORES

α	150	153	156	159	162	165	168	171	174	177
1	7	11 *g*	—	—	17	29	53	7^2	—	31
7	43	—	—	—	19	17	7^5	—	13^2	—
11	17	61	67	7	13 *l*	11 *i*	—	71	23	89
13	—	—	13	—	31	7^2	17 *k*	109	11	—
17	—	17^2	7 *k*	11	—	83	67	—	—	7
19	23	—	—	—	7^2	—	11^2	17 *i*	—	13 *l*
23	83	7 *f*	17	—	—	13 *m*	—	—	7 *i*	37
29	7 *i*	—	—	17	—	—	—	7	29	—
31	—	—	7^2 *f*	89	—	61	—	37	—	7 *b*
37	11	7^2	19	—	13	23	113	—	7 *q*	—
41	13^2	23^2	—	19	109	7 *b*	11	61	107	113
43	7^2	67	—	107	37	71	—	7 *m*	—	11
47	41	103	—	37	7 *f*	—	17	13	73	—
49	101	—	—	41	—	13 *i*	7 *l*	11	—	—
53	—	13	11	7 *p*	—	—	19	17	31	41
59	11 *n*	—	7	—	71	29	23	—	13 *h*	7 *p*
61	—	—	—	11	7 *k*	—	13	131	19	—
67	13 *i*	11^2	—	7	—	—	101	—	—	109
71	7	19	—	—	53	73	—	7 *f*	—	13
73	—	—	7	—	—	—	47	13	101	7
77	—	—	61	13	41	11^2	7	89	—	29
79	17	7 *g*^{3}	—	19 *l*	73	59	—	41	7 *f*	23
83	—	—	—	11	19	7 *k*	—	—	—	—
89	79	11	29	59	7 *g*	53	—	—	—	—
91	—	—	13 *h*	—	11	47	7 *i*	—	—	—
97	31	89	11	17	43	7	61	29	—	13 *n*

β	151	154	157	160	163	166	169	172	175	178
1	—	—	7	—	—	13	—	103	11 *n*	7
3	11	73	41	13	7 *b*	—	—	—	23	19
7	—	7 *m*	113	—	23	—	11 *l*	—	7 *o*	—
9	29	19	23	7	47	17	37	—	—	11
13	7 *h*	—	19	67	11	37	13	7	83	47
19	13	17	11	83	—	—	7	67	—	103
21	—	7	79	37	19	11	—	17	7	71
27	7	—	—	11 *m*	29	13	—	7 *k*	17	—
31	—	13	—	17 *k*	7	—	—	—	47	11
33	37	11 *k*	—	—	—	—	7 *o*	19	89	17
37	—	43	—	7 *l*	17 *m*	127	—	11	13 *i*	—
39	—	—	—	43	—	7	13	—	—	—
43	19	—	7 *g*	61	59	11 *h*	—	43	53	7
49	—	7	—	11	—	—	17	47	7 *k*	13

γ	152	155	158	161	164	167	170	173	176	179
3	23	37	—	—	47	—	7^2	11^3	29	—
9	67	13	—	89	61	$7^2 f$	73	19	—	—
11	7 o	—	97	—	—	17	—	7	11	—
17	—	59	—	71	—	73	7fg	—	79	19 k
21	31	11 b	13	7^3	—	23	—	—	67	—
23	13	19^2	—	23	11	7	29	17	—	—
27	—	—	$7^2 b$	—	—	43	—	—	—	7 g
29	97	53	11	127	7	—	—	13 m	17^2	—
33	—	7^2	71	13 b	—	29	—	—	7f	79
39	7^2	41	47	—	17	19	11	7	31	—
41	—	—	7 m	—	41	—	—	—	13 k	7f
47	79	7	13 k	67	—	—	—	11 i	7	131
51	101	—	11^2	31	—	7	17^2	—	19	29
53	7	103	83	29	—	11	—	7 n	127	13
57	11 i	47	101	107	7	13	37	17	—	—
59	—	—	—	11 g	109	—	7	—	—	—
63	—	79	29	7	101	—	113	97	17	11 k
69	—	—	7	19 k	43	41	13^2	11	—	7 b
71	—	23	59	103	7 g	31	43	29	41	—
77	—	37	—	7	—	19	—	—	11	—
81	7 n	—	—	11	—	97	19 l	7 g	—	—
83	17 l	—	7	—	53	13	11	—	—	7^2
87	—	11 g	—	—	—	—	7	—	23	—
89	—	7 b	—	—	11	103	23	—	$7^2 i$	—
93	41	31	23	—	—	7	—	—	13	19
99	—	19	13	97	7	107	—	127	11	41

β	151	154	157	160	163	166	169	172	175	198
51	109	—	19	7	83	—	11 k	13	—	—
57	23	13 l	7	—	11	—	31	—	97	7
61	—	—	—	—	—	—	7	41	17	53
63	59	7 q	11	—	—	19	—	61	7 g	—
67	29	—	—	—	13	7	19^2	31	11	17
69	7f	31	13	—	—	79	71	7	—	107
73	—	—	—	—	7	—	11	23	—	61
79	43	23	31	7	11	13	—	37	—	19
81	17 i	113	43	13	—	7	—	11	—	—
87	—	17	—	—	7	11 n	—	59	43	31
91	11	7	—	—	37	—	13	—	7^2	—
93	—	—	17	$7f^2$	13^2	—	—	—	73	29
97	7 g	—	—	—	19	59	23	7^2	—	11
99	—	11	7 n	17	23^2	—	89	—	—	7

18000

α	180	183	186	189	192	195	198	201	204	207
1	47	—	11 i	41	7 g	—	—	—	23	127
7	11	—	23	7 n	—	—	29	—	—	—
11	7 m	—	37	—	—	109	11	$7g^2$	—	139
13	—	—	7	—	—	13 i	—	—	137	7 f
17	43	13	—	—	11	29	7 i	—	17	—
19	37	7	43	—	—	131	—	11 m	7	—
23	67	73	11	127	47	7	43	—	13	17 k
29	11^2	—	13	23	7 o	59	79	—	31	19
31	13 i	23	31	11	—	—	7	41	—	—
37	17	11	—	29	—	7	83	13	107	89
41	—	—	7	13 m	71	—	—	11	—	7
43	—	13 h	103	19	7	—	—	—	—	—
47	—	7	29	—	19	11	89	—	7 k	—
49	—	59	17	7	—	113	23	—	$11^2 g$	—
53	7	—	23	11	13	—	—	7	113	—
59	—	11	47	—	—	—	7	19	41	—
61	—	7 p	—	67	11 h	31	—	—	7 n	13
67	7 l	—	11	13	—	17	—	7 p	97	19
71	17	—	—	61	7	—	31	23	11	—
73	11 m	19	71	—	—	23^2	7 h	—	59	—
77	—	17 k	19	7	37	—	11 g	—	—	79
79	101	—	—	—	13	7	103	17	—	11
83	13^2	31	7 h	41	11	—	59	—	—	7
89	—	7 n	11	17	—	19	—	13	7	—
91	79	53	—	7	101	11 g	—	61	31	17
97	—	—	7	11^2	23	—	101	19	103	7

β	181	184	187	190	193	196	199	202	205	208
1	23	—	—	—	—	17	7	—	13 i	11 m
3	43	7 f	59	31	97	—	13	89	7 l	71
7	19	79	13	83	43	7	17	11^2	—	—
9	7 g	41	53	—	—	—	43	7	—	—
13	59	—	—	—	7 m	11	—	17 l	73	13
19	—	113	—	7 fg	—	23	—	—	17^2	109
21	—	13^2	97	23	139	7	11	73	—	47
27	—	—	61	53	7 f	19	—	113	13	59
31	—	7	—	—	13	67	19	—	7^2	37
33	—	—	11 g	7	—	29	31	—	—	83
37	7	103	41	—	61	73	—	7^3	11	67
39	11 h	—	7	79	83	41	127	37	19 k	7 g
43	—	—	—	137	23 l	13	$7^2 f$	31	—	19
49	—	19	—	43	11	7^2	—	—	—	—

γ	182	185	188	191	194	197	200	203	206	209
3	109	—	—	7	—	17i	83	79	11	—
9	131	83	7	97	13	—	11h	23	37	7l
11	—	107	13	29	7q	23	—	19	—	11
17	—	—	31	7	—	—	37	11	53	13
21	7i	—	11l	—	—	13n	—	7	17	—
23	—	—	7	13	—	11^2	—	—	41	7^3
27	11	97	67	31	—	—	7	—	—	17
29	—	7	19	11n	—	109	—	29	7^2	—
33	—	43	37	19^2	—	7	13k	—	47	11^2
39	13k	—	—	—	7	—	29	11p	—	—
41	17l	—	83	—	—	19	7^2	—	—	43
47	71	17	47	41	—	7^2g	—	—	11	—
51	—	13	7	11	53	—	—	47	107	7o
53	—	—	17	107	7^2	—	11	—	19	23
57	—	7f	109	—	—	23	31	—	7g	19
59	19m	67	—	7^2h	11l	—	13	—	73	—
63	7	19	13	—	—	—	—	7	—	—
69	—	31	—	29	—	53	7q	—	11	13
71	11^2	7^2	113	19	—	17	—	13	7	67
77	7^2	13	43	127	—	—	17	7o	23l	11
81	101	17	79	—	7f^2	131	43	89	—	—
83	47	—	23	—	—	73	7i	11h	13n	—
87	—	—	11h	7	13	47	53	19l	137	31
89	—	29	13	31	—	7f	—	—	17	139
93	11	—	7	17	101	—	71	—	—	7
99	29	7	—	73	17m	13	101	—	7	11k

β	181	184	187	190	193	196	199	202	205	208
51	7	—	17	—	37	43	71	7f	—	29
57	67	—	—	17i	13	11	7	47	61	—
61	11g	—	73	7^2	19	—	—	—	29	23
63	41	37	29	11	17^2	7r	—	23	—	31
67	37	59	7^2	23	107	71	41	13	131	7f
69	—	11k	137	—	7	13h	19	—	67	41
73	17	7^2g	—	—	—	103	—	11i	7	—
79	7^3	17	89	—	—	11	—	7	13	—
81	—	—	7	—	—	—	13l	17	11	7i
87	13	7i	—	—	—	—	11k	—	7h	—
91	—	11o	19k	17	—	7l	—	103	59	13
93	7k	—	—	61	11o	47	—	7g	—	17
97	31	53	—	13^2	7h	—	—	—	43	—
99	—	13	11	71	19	—	7	53	—	—

α	210	213	216	219	222	225	228	231	234	237
1	—	7*h*	—	11^2	149	—	151	13	7	137
7	7	11*g*	17*m*	19	53	71	—	7	89	151
11	—	101	—	—	7*i*	—	—	11^2	41	131
13	—	—	—	17	97	47	7	29	13	23
17	—	—	—	7*m*	13	11 *k*	—	—	—	37
19	—	—	13	23	17	7	19	61	11	—
23	—	—	7	11	71	101	29	19	59	7
29	17	7*f*	43	—	—	13	37	101	7	61
31	—	83	97	7*g*	11 *p*	—	17^2	—	—	19
37	109	19	7*f*	—	37	31	41	17	23	7
41	53	—	17*i*	37	23	—	7*g*	73	11	—
43	11	7	23	—	13*l*	—	53	—	7*h*	—
47	13	—	—	17	—	7	11*m*	79	—	—
49	7*m*	37	—	47	19	—	73	7	131	11 *h*
53	37	131	59	29	7*fh*	19	—	13^2	47	—
59	—	13 *m*	11^2	7	—	17	—	—	—	23
61	—	41	—	—	113	7*f*	—	19 *k*	29	—
67	—	23	47	11	7	—	13	—	31	—
71	19	7*p*	13	127	—	—	—	17*l*	7^2	11
73	13	11 *l*	—	7 *p*	—	—	89	—	—	—
77	7	—	53	—	—	107	—	7^2*f*	17	13 *m*
79	107	—	7*i*	31	—	67	137	13	53	7 *p*
83	29	—	—	13*i*	—	11	7^2	97	23	17
89	—	73	23^2	11	31	7^2	47	—	83	—
91	7*k*	—	109	—	—	19*l*	11	7	13^2	37
97	17^2	—	13	—	11	59	7	—	—	53

β	211	214	217	220	223	226	229	232	235	238
1	—	—	—	7^2	29	97	—	—	71	—
3	47	17	11	—	—	7	37	—	19	13
7	—	—	7^2	59	—	13*n*	—	23	11	7*i*
9	11*i*	97	17	13	7	23	31	—	—	29
13	43	7^2*i*	—	—	53	—	11	139	7	—
19	7^2	—	37	97	11	—	13 *o*	7*m*	29	—
21	—	31	7*l*	19^2	13 *h*	—	—	11	43	7 *o*
27	37	7	—	—	83	11^3	101	—	7	—
31	11 *h*	29	31	—	137	7*r*	23	13	—	—
33	7	—	103	11	23	13	17 *i*	7	101	—
37	23	13 *h*	—	—	7	—	—	19	—	11^2
39	—	11	—	—	89	—	7*l*	17	—	31
43	—	41	17	7 *q*	—	—	—	11	13	113
49	—	89	7*g*	17	—	11*l*	53	67	—	7

ν	212	215	218	221	224	227	230	233	236	239
3	7 g	—	—	23 m	43	73	—	7	—	11 o
9	127	137	113	—	—	—	7 i	11 g	—	—
11	—	7^2	17	—	73	13	—	—	7	—
17	7^2	—	—	17	29	—	—	7	11 i	—
21	—	—	—	11	7	—	—	—	13 k	19
23	19	—	139	—	17	31	7fg	83	—	47
27	—	11 i	13 k	7 l	41	—	—	—	—	71
29	13 k	—	83	—	11	7 b	—	41	—	—
33	17	61	7	—	—	127	31	—	—	7 g
39	67	7 b	—	13^2	19	—	—	—	7 f	37
41	11	13	—	7	—	—	—	17	47	89
47	—	29	7	—	—	23^2	19	37	13 b	7 f
51	79	23	—	17	11 g	—	7 n	19	67	43
53	53	7	13 o	—	—	61	—	11^2	7 m	17
57	29	—	11	—	17	7	—	—	41	—
59	7	—	—	—	37	11	—	7 q	59	13 i
63	11	—	—	37	7	13 b	—	61	—	31
69	—	—	19	7	—	—	17 k	—	—	11
71	89	11 n	—	—	23	7	—	—	—	—
77	—	—	131	67	7g^2	—	47	97	—	—
81	13	7	—	41	—	11 i	—	103	7 b	—
83	—	113	79	7	—	—	41	67	11	29
87	7	—	43	11	113	—	—	7 g	—	17^2
89	61	—	7 r	—	43	13	11	19	—	7 k
93	107	11 g	—	—	83	23	7	149	19 l	—
99	19^2	—	61	79	149	7	—	—	13	103

β	211	214	217	220	223	226	229	232	235	238
51	13	19	—	—	7 m	—	59	—	11	17 k
57	—	43	—	7 k	79	139	11	13	—	—
61	7	11	47	13	59	17 m	—	7	—	107
63	—	13^2	7	—	11 i	131	—	43	—	7^2
67	61	—	—	—	—	19	7 b	53	—	29
69	—	7	11	29	—	—	103	—	7^2g	—
73	31	109	—	—	13	7 o	—	17 n	11	—
79	—	47	29	—	7 k	—	11	—	17 i	—
81	59	—	23	71	—	37	7^3	31	—	11 g
87	—	—	—	13	61	7^2	127	11 l	103	—
91	—	—	7 f	—	—	—	83	—	31	7
93	—	—	19 m	—	7^2	11	—	—	—	—
97	11 o	7 n	71	19	—	—	13 l	—	7	23
99	17 l	—	—	7^2f	13	—	109	23	—	—

TAB. I. DIVISORES

α	240	243	246	249	252	255	258	261	264	267
1	—	19	73	37	11*l*	7	—	43	17	—
7	—	109	11	—	7*g*	23	131	—	—	17
11	13	7*k*	—	29	17	97	53	—	7^4	—
13	11*n*	41	151	7	19	31	83	—	61	—
17	7*q*	—	103	—	151	17*i*	11	7^2*g*	—	—
19	—	83	7	—	—	13^2	—	—	29	7*f*
23	—	13	—	—	11	—	7^2*h*	151	—	—
29	—	—	11	97	—	7^2	23	17*l*	13*i*	—
31	7	29	—	107	23	11^2	13	7	—	—
37	13*p*	—	71	11	—	—	7	59	—	—
41	29	101	41	7^2	43	—	—	—	137	11^2*g*
43	—	11	19	—	—	7*o*	43	13	31	47
47	139	97	7^2	13*i*	—	59	—	11	53	7
49	—	13	157	61	7	29	—	79	—	23
53	67	7^3	89	—	—	11*k*	103	—	7	31
59	7^2	—	—	11	13*l*	61	19	7*n*	—	—
61	—	17	7*g*	109	—	—	11	—	47	7
67	41	7*s*	17	—	11	37	—	137	7*i*	13*l*
71	—	—	—	—	37	7*g*	41	—	103	19
73	7*i*	—	11	13*h*	127	107	—	7	23	41
77	—	19	—	—	7*k*	—	113	—	11*l*	—
79	11^2	—	23*l*	—	17	—	7	47	—	61
83	—	37	—	7*p*	131	—	11*g*	—	71	—
89	13*h*	29^2	7	—	11^3	—	—	—	—	7*p*
91	—	—	—	67	7	157	17	11	59	73
97	—	31	—	7	41	11*g*	19*l*	17*k*	—	127

β	241	244	247	250	253	256	259	262	265	268
1	7*f*	13	17	23	—	—	59	7*i*	—	—
3	—	23	7	11	—	—	—	—	17	7^2
7	—	—	31	17	—	29	7	73	13	11
9	—	7*f*	—	89	—	—	13	—	7^2	17*i*
13	—	—	13	—	17	7	—	11	—	—
19	89	—	19	127	7	11*h*	—	157	23	13
21	—	—	59	131	—	—	7^2*k*	13	11	—
27	23	13	79	29	19*m*	7^2	11	—	41	139
31	59	11	7	—	73	19^2	—	17	43	7
33	—	53	—	—	7^2*f*	—	—	37	13^2	—
37	—	7	29	—	13	31	37	—	7*h*	47
39	101	—	11*g*	7^3	—	—	—	19	—	—
43	7	—	109	79	—	—	—	7*k*	11*i*	17
49	19*o*	23	—	37	—	13	7*f*	—	139	—

y	242	245	248	251	254	257	260	263	266	269
3	—	107	17	13	7 *i*	—	—	29	37	—
9	43	—	—	7 *b*	—	47	31	—	11 *o*	71
11	11 *m*	127	43	—	—	7	19 *n*	83	13 *k*	17
17	61	—	13 *k*	—	7	—	—	—	43	11
21	53	7 *m*	—	—	11	17^2	—	—	7	—
23	—	137	103	7 *n*	—	29	53	11	79	13 *i*
27	7	—	11 *n*	—	47	13	17	7	—	—
29	—	19	7	13	59	11	—	113	31	7
33	11	—	19	41	29	—	7	17	—	23
39	—	53	59	23	—	7	13	—	17	11 *m*
41	7	11 *k*	—	31	13 *i*	—	—	7 *r*	—	29
47	—	—	—	—	—	—	7 *t*	—	—	—
51	—	—	—	7	31	11	109	13	29	—
53	79	43	29	—	—	7 *g*	—	19^2	11	—
57	127	13	7 *r*	11	—	43	71	—	19 *k*	7
59	17	41	—	139	7	—	11 *k*	43	53	—
63	19	$7f^2$	23^2	—	—	—	67	41	7 *g*	59
69	7	79	13	—	—	73	131	7	—	149
71	13	—	7 *bf*	—	—	—	29^2	—	149	7
77	11	7	—	17	73	149	89	13	7 *n*	53
81	—	47	139	13^2	83	7 *l*	11	23 *m*	—	—
83	7	13 *t*	149	—	17	19 *k*	—	7	—	11^2
87	149	23	41	89	7 *f*	107	19	—	—	—
89	107	67	—	—	71	17 *n*	7	11	13	137
93	17	—	11 *m*	7 *t*	13 *r*	—	97	—	—	—
99	11 *q*	17	7	113	43	—	—	—	—	7^2i

β	241	244	247	250	253	256	259	262	265	268
51	—	7^2	53	13 *o*	101	113	—	—	7	11
57	7^2b	37	19	—	—	—	101	$7f^2$	—	107
61	37	61	11	19	7	67	13	—	—	—
63	73	17	—	71	13	11	7	—	101	—
67	$11g^3$	43	—	7	—	—	23	—	31	67
69	—	—	17 *m*	11 *p*	23	7 *i*	—	109	163	97
73	23	—	7	—	—	—	19	13 *p*	—	7 *f*
79	—	7 *g*	71	31	41	—	83	11	7	—
81	—	—	—	7	17	61	—	41	19	—
87	19^2	47	7	—	53	17	13	97	11	7 *k*
91	17	19	13	11	—	23	7 *q*	61	—	—
93	13	7	—	23	67	—	11 *b*	—	7 *i*	—
97	—	11 *b*	137	—	109	7	—	—	—	13
99	7	—	—	19	11	31	—	$7b^2$	67	37

TAB. I. DIVISORES

α	270	273	276	279	282	285	288	291	294	297
1	13 m	23	7	—	—	11	83	—	—	7
7	113	7 q	19	11 p	67	29	—	13	7	61
11	—	31	—	13 i	—	7	47	43	—	11 n
13	7 h	11 g	53	103	89	—	—	7	67	43
17	—	59	—	—	7 l	—	—	11	23	—
19	41	17	71	—	—	19^2	7 k	37	13 m	113
23	61	89	23	7	13^2	11	19 n	—	—	—
29	151	—	7	11	—	47	127	—	—	7 m
31	—	151	—	17 m	7 n	103	11	—	19	13
37	19	—	29	7 g	11 h	—	—	—	—	131
41	7	19	131	—	31	—	151	7 k	59	—
43	—	37	7 f	—	61	17 k	—	151	—	7^2
47	17 n	23 l	—	—	47	—	7 g	—	11	151
49	11	7	43	19	13 o	—	17	103	7^2	71
53	13	17	—	—	19	7	11 p	—	—	—
59	—	109	17	73	7 f	—	—	13	89	—
61	—	—	139	—	59	13^4	7^2 i	11^2	17	—
67	—	—	73	—	23	7^2f	—	—	79	17^2
71	11 k	101	7 s	83	17	—	—	31	13	7
73	—	31	—	11	7^2	—	13	—	—	19
77	—	7	13	101	—	17 o	67	163	7	11
79	13	11 i	89	7^2	—	—	—	—	41	97
83	7 r	139	19 m	—	—	101	17	7 f	—	13 l
89	103	61	—	13	—	11 k	7	17^2	37	—
91	—	7^2g	—	23	19	—	167	—	7 f	31^3
97	7^3	—	—	—	—	—	11 n	7 p	13	83

β	271	274	277	280	283	286	289	292	295	298
1	41	11 q	—	—	7 g	37	—	—	—	17
3	—	67	13	41	11 m	—	7	19 l	163	—
7	—	—	103	7	—	—	137	—	19	41
9	—	—	11^2	37	—	7 t	—	—	23	13
13	19	79	7 n	109	23	13 m	29	131	11	7
19	47	7	53	—	—	—	11^2	61	7	—
21	37	17	19	7	127	—	—	—	53	11
27	—	—	7 h	—	13	—	—	11	—	7
31	13	—	11	—	41	—	7	—	—	23
33	43	7	—	17^2	29	11 i	—	23 o	7	—
37	11	—	—	23^2	43	7	19	13^2	—	—
39	7	23	—	11	17	13	43	7	109	53
43	—	13	—	29	7	—	103	—	31	11
49	17	—	—	7	—	—	—	11	13	19

γ	272	275	278	281	284	287	290	293	296	299
3	11	7	—	157	—	—	13k	—	7	17
9	$7g^2$	—	—	—	—	19	—	7r	29	11
11	—	11o	7l	—	—	—	67	—	—	7
17	17	7	—	31	157	13q	—	19	7	—
21	163	13l	43	61	97	7f	—	109	19	—
23	7	17	—	—	43	—	—	7s	11	23
27	19	—	—	11	7m	23	—	—	13p	—
29	73	—	17	23	—	—	7fg	139	—	173
33	113	11	13	7	—	59	—	—	—	37
39	—	—	7o	19	—	29	71	—	107	7^2g
41	—	—	11	107	7b	41	113	13n	—	79
47	11	13^2	—	7	—	17i	31	—	23	—
51	7b	—	—	—	23	—	11i	7^2	149	61
53	—	59	7k	47	37	—	17	149	13	7f
57	97	17	89	37	11g	149	7^2	31	47	29
59	—	7m	13	29	149	—	—	11b	7i	—
63	137	43	11b	—	—	7^2	—	—	—	19^2
69	11n	19	29m	17	7^3	13	41	43	—	23
71	—	79	47	11g	71	—	7	23	—	17o
77	—	11k	61	19	—	7	—	19	59	31
81	—	—	7^2	—	19	17	13	11	67	7
83	—	—	—	—	7g	107	127	—	—	—
87	13	7^2	79	71	61	11	17l	—	7	157
89	29	47	167	7	31	—	19	—	11	—
93	7^2	41	—	11^2	—	—	47	7bg	23	89
99	—	11g	23	163	—	31	7	—	17	131

β	271	274	277	280	283	286	289	292	295	298
51	19	97	—	—	—	7	13b	—	29	—
57	13	—	41	—	7	—	23	17	11	73
61	157	7	17k	11	79	—	—	29	7o	13
63	23	29	—	7i	113	—	11	13	17n	—
67	7	11^2	—	13b	19	109	83	7n	—	—
69	101	13	7	—	11	—	59	—	—	7b
73	29	83	—	67	17	53	7	73	—	—
79	—	—	—	43	13n	7h	—	19k	11	—
81	7f	—	13	—	101	23l	73	7q	—	—
87	31	—	37	—	—	—	7o	—	—	11^2g
91	—	37	—	7	11l	13	53	17	127	71
93	71	19	—	13	—	7	79	11	101	167
97	—	31	$7i^2$	—	73	—	107	—	17	7
99	59	107	—	—	7	11	47	83	—	29

α	300	303	306	309	312	315	318	321	324	327
1	19	157	71	13	41	17^2	7^2*f*	47	—	53
7	37	—	127	31	11	7^2	17	97	23	—
11	—	17	7	—	23^2	—	13	163	—	7
13	—	—	11^3	19	7^4	—	29	17	—	—
17	13	7 *t*	17	43	19 *m*	—	—	—	7 *f*	—
19	11	—	67	7^2	—	43	47	—	17	—
23	7	—	113	17^2	—	29	11^2	7 *g*	—	43
29	—	13	109	157	11 *h*	41	7	19^2	—	23
31	59	7^2	—	—	—	+	139	11 *k*	7 *o*	71
37	7^2	23	—	—	—	11 *q*	13 *m*	7	163	19
41	11	—	13	—	7	—	17	—	—	29
43	13	19	—	11 *l*	157	—	7	—	—	137
47	—	—	19	7	—	—	—	17 *m*	71	11 *g*
49	151	11 *m*	—	—	—	7	—	13	37	—
53	41	127	7 *l*	13	—	139	53	11 *n*	17 *k*	7
59	—	7	23 *p*	83	—	11 *i*	—	—	7	17 *o*
61	23	97	—	7	43	37	151	29	11 *g*	181
67	107	—	7 *g*	173	—	—	11	19	—	7 *m*
71	—	11^2	—	—	—	131	7 *l*	53	19	—
73	17 *l*	7	37	47	11	—	—	—	7	13
77	19	37	—	—	—	7 *g*	127	23	47	73
79	7	17	11	13	31	23	71	7	—	—
83	67	23	61	—	7 *o*	—	—	—	11	—
89	—	—	—	7 *i*	67	31	11 *g*	—	53	—
91	—	—	47	17	13 *l*	7	—	—	—	11^2
97	—	113	—	139	7 *h*	19	167	11	—	—

β	301	304	307	310	313	316	319	322	325	328
1	31	7 *p*	11	29	113	—	19 *k*	13	7	—
3	—	—	—	7 *p*	23	11g^2	61	—	—	—
7	7*fh*	13	—	101	—	—	—	7 *p*	—	53
9	—	47	7 *o*	11	131	73	17	31	19 *l*	7 *p*
13	—	17	—	—	173	101	7 *q*	—	13*ot*	11 *i*
19	—	19	13 *h*	—	—	7	59	11 *l*	31	37
21	7 *g*	29	31	67	—	103	137	7	17	23
27	47	—	—	19 *k*	—	—	7	13 *n*	11	17
31	29	—	79	7*fg*	17 *i*	47	37	167	—	—
33	—	13	73	—	—	7	11	—	—	—
37	—	11	7	41	—	17	109	—	—	7
39	—	61	59	—	7f^2	29	19 *o*	103	13	—
43	43	7	71	37	13	—	17	19	7	—
49	7 *s*	—	97	61	23 *l*	—	43	7 *h*	11^2	107

y	302	305	308	311	314	317	320	323	326	329
3	—	11 q	—	19	31	7^2	—	—	—	13
9	17	—	—	13	7^2	37	—	—	—	—
11	—	13	11	53	101	19	7 b	79	—	—
17	11 o	—	—	29^2	89	7 k	101	17	13^2	—
21	47	23	7^2 b	—	13	—	11 o	—	—	7
23	—	131	13	—	7 u	—	31	—	17 i	11 o
27	167	7^3	29	17	11	—	—	—	7 s	19
29	19 n	—	—	7	53	—	—	11	67	13 b
33	7^2	19	11	163	17 p	13	103	7 m	—	—
39	11	—	—	—	149	17	7 k	73	127	—
41	—	7	—	11 i	23	—	179	—	7	—
47	7 l	11	109	—	13 o	53	73	7	—	47
51	13^2	137	—	—	7	—	—	11 b	103	83
53	—	—	—	—	71	113	7 i	—	—	31
57	79	—	59	7	83	11	—	13 i	17^2	—
59	—	—	—	—	163	7 g	—	—	11	23
63	53	13	7	11	73	23	—	—	89	7 b
69	—	7 f	—	71	—	—	—	—	7 g	—
71	—	19	—	7 t	11	—	13	—	37	—
77	13 b	—	7 f	—	—	43	—	—	41	7^2
81	107	53	—	—	—	61	7	—	11	13 p
83	11	7 b	89	—	19	37	—	13 q	7^2 k	—
87	31	73	67	13	23 n	7 i	11	139	—	—
89	7	13^2	17 k	—	—	83	—	7^2	97	11
93	—	—	—	—	7 f	—	67	29	—	—
99	41	37	11 r	7	13	—	—	179	19	—

β	301	304	307	310	313	316	319	322	325	328
51	11	37	7 k	—	107	31	89	—	43	$7i^2$
57	53	7 i	—	13	—	—	—	—	7	11 l
61	—	83	19	89	11	7	31	—	—	17
63	7 m	41	—	—	79	—	—	7 f	—	59
67	97	—	11	47	7	—	13	41	29	23
69	—	—	29	—	13 i	11	7	23^2	—	—
73	11 g	31	—	7 k	137	19	—	59	—	71
79	103	29	7	—	—	79	113	13^2	—	7^2 f
81	—	11 b	—	—	7	13	—	19	31	131
87	—	43	17	7	—	—	29	83	—	—
91	7 i	—	41	—	—	11 p	—	7^2	13 k	31
93	109	—	7 r	17 m	—	41	13 k	43	11	7 n
97	—	—	13 k	11^2	—	29	7^2	—	37	67
99	13 k	7	19	137	17	—	11	—	7	167

TAB. I. DIVISORES

α	330	333	336	339	342	345	348	151	354	357
1	61	—	—	7l	23	—	13	11	—	19
7	13	19	7	41	79	11	—	—	—	7
11	11	—	19l	—	—	—	7	—	17	13o
13	—	7	—	11	—	—	31	13n	7	71
17	137	—	—	13	—	7	37	—	107	11h
19	7r	11g	—	107	19	—	—	7l	—	23
23	—	47	—	—	7	19k	97	11m	—	139
29	—	—	—	7n	13	11p	29	—	71	—
31	17l	—	13^2	—	—	7	61	19p	11	—
37	—	17n	—	—	7u	—	11	41	—	13
41	19n	7f	—	—	97	13	—	—	7t	103
43	173	—	17	7g	11^2	—	—	113	23^2	31
47	7	—	—	83	23	179	—	7	—	—
49	—	—	7fi	17	29	—	—	—	—	7
53	—	—	73	19	—	109	7g	—	11^2	—
59	13	—	97	29	—	7	11	—	59	—
61	7	73	41	—	—	17i	71	7	—	11
67	43	61	131	—	—	13	7h	11k	29	47
71	—	13h	11	7k	43	181	—	—	79	—
73	—	23	151	53	—	7f	43	17	19	83
77	11m	—	7h	61	151	71	—	29	13	7i
79	19	29	—	11	7s	151	13	127	17	37
83	—	7i	13	17	—	—	—	151	7n	11
89	7l	173	59	41	17	—	139	7f	23	13
91	—	—	7	19	53	—	23n	13	—	7
97	23	7g	31	—	—	29	—	61	7f	—

β	331	334	337	340	343	346	349	352	355	358
1	79	127	67	11^2	—	7	17	—	131	—
3	7	—	—	37	—	—	11i	7q	13	—
7	—	11	37	31	$7g^2$	—	67	17i	—	61
9	113	—	13	71	11	53	7	137	—	—
13	—	—	—	7p	—	—	—	23	17	59
19	—	23	7	—	—	13	—	41	11	7^2h
21	11	19	—	13	7	89	47	—	—	113
27	157	—	29	7	—	31	53	—	—	11
31	7	101	89	—	11	—	13	7^2	—	—
33	17	67	7t	—	13i	59	181	11	—	7
37	13	29	11	101	—	19	7^2k	167	—	—
39	31	7h	—	—	23	11q	—	131	7	—
43	11k	53	41	59	61	7^3	83	13	—	73
49	—	13m	—	79	7^2	—	—	101	19	11

γ	332	335	338	341	344	347	350	353	356	359
3	—	—	7f	67	—	—	17l	43	—	7k
9	11	7	—	23	19	61	13	17m	7	149
11	—	23m	—	7f	13	103	157	—	149	—
17	59	11^2	7	109	127	149	19^2	—	—	7^2
21	139	—	31	149	—	—	7	$11g^2$	179	17
23	—	7	149	—	29	13	—	—	7^2	—
27	149	13	—	—	173	$7f^2$	—	—	23	37
29	7q	—	—	—	—	—	23	7^3	11o	19m
33	167	—	23	11l	7	47	53	89	13	—
39	43	11	13i	7	—	—	37	—	157	83
41	13	17	43	—	11m	7^2	67	59	29	127
47	—	—	11b	—	7^2i	—	101	13	43	103
51	41	7	—	13n	47	19m	—	23l	7f	—
53	11	13l	97	7^2b	131	23	—	—	101	157
57	7	23	—	—	—	—	11	7	181	41
59	79	37	7^2	—	17	—	—	19	13^2	7f
63	29m	—	—	127	11g	—	7	—	19	—
69	17i	—	11	47	—	7	—	113	53	—
71	7^3	59	—	—	—	11l	17	7m	—	13
77	107	—	19	11g	23	83	7	17	—	—
81	23	—	17	7i	29^2	—	—	—	31	11
83	83	11p	31	—	—	7	—	41	17	—
87	—	—	7q	17	—	43	13	11	127	7r
89	—	—	—	179	7g	19	—	43	89	17l
93	13^2	7	—	31	17	11	19	—	7	—
99	7u	—	109	11	—	17k	—	7g	29	—

[illegible]	331	334	337	340	343	346	349	352	355	358
51	—	11	—	17	—	—	7	—	73	—
57	71	—	—	—	17p	7	13	—	31^2	23
61	—	—	7^2g	—	—	11k	—	37	43	7q
63	13	109	19	23	7	17	—	179	11r	—
67	17	7^2	—	11i	—	—	73	—	7	13m
69	41	—	—	7m	—	37	11^2b	13	—	—
73	7^2	11b	—	13	37	—	41	7	—	29
79	—	—	17	53	31	—	7i	—	47	—
81	—	7	11n	173	—	79	—	—	7gb	53
87	7f	—	13k	89	137	—	59	7v	19	17
91	—	107	—	73	$7b^3$	113	11	—	—	19
93	19	—	47	103	163	—	7	29	—	11g
97	89	19o	—	7	11r	13b	79	47	—	—
99	—	139	73	13p	41	7	31	11	97	—

α	360	363	366	369	372	375	378	381	384	387
1	7 n	31	17	—	—	—	103	7	11	13^2
7	—	—	—	13 h	29	—	7 f	53	193	—
11	—	11	31	7	127	—	—	23	71	—
13	—	—	19 o	—	11 h	7 k	—	—	107	—
17	—	23	7	19 l	—	—	13	47	41	7
19	181	—	11	—	7 g	17	59	—	103	31
23	13 h	7	53	—	—	157	109	67	7 f	—
29	7	17	—	—	59	—	11 i	7 g	83	—
31	137	47	7	—	31	13	—	17	—	7 f
37	—	7 l	—	43	23	—	157	11	$7h^2$	—
41	23	—	11	17 o	167	7 m	79	43	13	19
43	7 i	—	—	—	—	11	13 o	7	37	17 p
47	11 l	19	13	—	7 h	—	—	37	—	—
49	13 q	163	67	11	193	—	7	—	—	—
53	31	—	—	7	—	17 q	—	—	—	11 g
59	107	103	7	13	19 n	23^2	17^2	11	—	7^3
61	—	13	61	23	7	—	—	31	—	83
67	—	41	37	7	83	—	19	—	11 g	—
71	7	37	—	11	13 q	—	—	$7^2 i$	17 m	137
73	—	—	$7g^2$	—	—	—	11^2	59	79	7 l
77	43	11	—	103	—	53	7^2	—	109	17
79	109	7	43	—	11	—	—	73	7 k	13 i
83	—	—	—	31	23	$7^2 g$	43	—	29	—
89	151	—	19	47	7^2	—	—	—	11	79
91	11 h	151	—	71	89	—	7	181	61	—
97	—	17	—	—	13 i	7 o	—	—	137	11

β	361	364	367	370	373	376	379	382	385	388
1	13	89	7^3	163	11	19	151	—	—	7 k
3	79	59	17^2	—	7 w	31	29	11 k	139	—
7	—	7^2	11 q	23	—	—	—	13	7	151
9	—	23	—	7 h	—	11 g	167	19	97	197
13	$7^2 f$	13	—	—	—	29	31	7 r	19	37
19	19	79	73	—	67	—	7	—	13	11
21	41	$7f^2$	—	—	—	17	13	37	7	—
27	7 g	73	19	61	163	191	17 k	7 p	59	41
31	—	17	23	19	7	11^2	83	—	53	13 l
33	23	—	109	29	37	—	7	13 h	11 m	—
37	—	83	17	7 fg	—	61	59	—	89	71
39	71	13	—	—	—	7 i	11	—	17	—
43	47	11	7 l	17	107	—	19	167	—	7 m
49	37	7 o	—	—	13^3	—	137	23	7	53

γ	362	365	368	371	374	377	380	383	386	389
3	41	173	13 *i*	11	113	37	7 *t*	—	—	—
9	—	11	—	43	—	7	191	29	—	13 *o*
11	7^2	29	131	17 *n*	11 *i*	43	—	7 *g*	—	167
17	—	13 *r*	11	—	17 *m*	—	7	—	23^2	—
21	29	59	—	7	23	67	193	—	11	—
23	11 *n*	—	23	—	—	7 *b*	47	19	13	—
27	17	—	7	137	13	31	11	—	19^2	7 *u*
29	—	—	13	107	7	29	17	—	—	11
33	19	7 *b*	—	71	11 *o*	97	73	—	7	—
39	7 *m*	61	11 *b*	—	29	13	—	7	—	23
41	—	—	7 *i*	13	—	11 *q*	109	23	17	7
47	67	7 *k*	—	11^2	—	—	—	31	7	17 *l*
51	—	—	43	97	17	7	13	—	—	11
53	7	11	137	53	13 *p*	19	—	7	—	—
57	13	139	—	73	7	17	19	11^2	29 *m*	163
59	101	—	29 *m*	—	47	61	7	89	67	—
63	—	—	191	7	—	11	17	13^2	23 *o*	47
69	—	13 *l*	7 *k*	11 *m*	89	179	—	17 *n*	—	7 *i*
71	19 *k*	—	—	—	7 *r*	107	11	—	—	—
77	—	79	—	7 *q*	11	37	13 *l*	—	—	—
81	7 *v*	157	13	—	37	—	113	7	47	17
83	13	—	7 *f*	19^2	—	—	—	131	101	7
87	131	—	—	41	19	29	7	23	11	13
89	11	7	37	—	—	23 *r*	41	13	7	127
93	—	23 *n*	79	13	—	7	11	—	—	—
99	—	—	—	—	7 *f*	—	31	19 *p*	—	59

β	361	364	367	370	373	376	379	382	385	388
51	—	—	11 *g*	7 *u*	41	23	—	29	19	—
57	11 *i*	—	7 *s*	—	—	—	—	67	—	7^2 *g*
61	—	19^2	—	—	—	13	7 *fb*	—	—	—
63	29^2	7	97	13	—	—	—	83	7^2	11
67	59	—	—	101	11 *p*	7	—	17	—	—
69	7	—	83	19	—	139	43	7^2 *f*	—	47
73	61	—	11	131	7 *i*	101	13 *k*	—	17	—
79	11^2 *g*	—	—	7	—	41	163	101	173	17
81	97	191	—	11	29	7^2	19	—	41	59
87	—	11 *m*	—	—	7^3	13^2	—	—	47	37
91	—	7 *g*	—	29	139	—	—	11 *s*	7 *n*	—
93	17	—	—	7^2	61	—	—	149	—	19 *k*
97	7	—	31	—	—	11 *k*	—	7	13	97
99	53	17 *i*	7^2	23	149	—	13 *n*	—	11^3	7

TAB. I. DIVISORES

α	390	393	396	399	402	405	408	411	414	417
1	43	—	199	—	7	101	—	23	19	11 h
7	19	23	—	7	31	—	13 p	11 n	47	179
11	7	19	11 g	107	79	17	37	7^2	—	53
13	13	—	7	167	—	11 l	—	—	—	7 s
17	11	—	173	179	131	31	7^4	—	83	13
19	—	7 o	—	11 i	37	—	—	13	7 t	—
23	—	—	—	13 n	19 l	7^2	—	17 o	23	11
29	31	67	23	—	7^2	—	—	11	17	—
31	23	37	—	73	—	—	7 i	—	13	29
37	103	139	13	—	—	7	97	31	11	—
41	—	—	7^2	11	—	71	—	—	29	7 u
43	—	—	29	59	7	—	11 q	—	—	13^3
47	—	7^2 f	41	43	167	13	—	23	7 m	109
49	17	19^2	31	7 g	11	23 o	—	—	181	83
53	7^2	23 l	19	—	—	107	—	7	—	43
59	139	—	—	31	127	—	7 g	79	11	—
61	11 r	7	17	89	13 i	47	29	—	7	—
67	7	—	—	17	67	113	—	7	—	11
71	89	—	—	—	7 f	29	23	13	113	—
73	41	—	97	71	17 k	13	7	11 i	67	37
77	23	13^2	11	7	—	—	41	—	19 n	—
79	—	53	—	—	47	7 fh	—	—	—	41
83	11^2 h	—	7	—	—	—	—	—	13	7 q
89	—	7 h	13 p	—	—	37	31	—	7	11 l
91	13 m	11	19	7 l	43	—	103	17	—	23^2
97	—	—	7 r	23 n	59	—	—	13	17	7^2

β	391	394	397	400	403	406	409	412	415	418
1	61	31^2	29 n	13 h	191	11	7	—	47	—
3	—	7 g	—	109	41	19	—	—	7^3 f	17
7	—	157	59	11	17	7	19	89	—	97
9	7 n	—	—	—	173	—	11	7^2 l	13 m	—
13	—	11	151	—	7 g	17	163	—	—	—
19	—	—	—	7	23	151	17 l	47	—	19 m
21	19 l	79	11 k	31	61	7^2	151	—	—	13
27	11	89	—	13	7^2	—	—	—	131	151
31	109	7 p	67	—	31	41	11 t^2	—	7 h	59
33	—	47	—	7^2 i	53	179	—	—	41	11
37	7	113	79	—	11 i	—	13 q	7 p	73	17 k
39	—	—	7^2	—	13 l	—	—	11 k	—	7 p
43	13	—	11	23	—	97	7	—	—	—
49	11	103	—	29	157	7	—	13 i	—	—

γ	392	395	398	401	404	407	410	413	416	419
3	197	—	53	7 h	11	13 m	131	103	—	—
9	—	—	$7f^2$	19	17	—	23	101	—	7
11	113	—	41	—	7 k	11	—	109	—	—
17	—	43	29	7 f	13	19	—	79	—	167
21	7 g	—	—	53	83	43	17 i	7	—	11 n
23	61	11	7	—	—	193	—	31^2	107	7 r
27	—	29^2	—	—	—	139	7	$11h^2$	—	—
29	—	7	—	—	—	13^2	89	37	7 i	23
33	—	13	61	67	—	$7k^2$	37	—	17 m	19
39	—	19	—	11 o	7 r	—	—	67	13	17
41	—	—	—	137	37	131	7fg	—	—	—
47	13	71	—	19	11	7	—	173	—	—
51	—	—	7	—	19	—	—	—	—	7 g
53	17	37	11	—	7	83	61	13	23	—
57	37	7	—	13	23	53	—	—	7 f	—
59	11 p	13 h	23	7	—	—	19	59	—	—
63	7 v	—	—	—	43	—	11	7 i	61	29
69	107	—	—	—	11 g	59	7	41	—	—
71	173	7	13	17^2	—	—	67	11	7	19 q
77	7 m	19	—	—	17	11^2	—	7 k	71	13
81	11	—	19	23	7	13	—	—	—	—
83	163	23	—	11 g	—	17	7	29	73	—
87	17	31	—	7	—	—	181	—	—	11^2
89	101	11 s	113	—	19	7	17	—	47	199
93	—	17^2	7 o	—	—	19^2	13 l	11 r	173	7^2
99	13	7	17	61	—	11	73	—	7^2k	—

β	391	394	397	400	403	406	409	412	415	418
51	7^2h	—	127	11^2	—	13 r	31	7 v	37	—
57	—	11 h	83	41	—	109	7	—	29	19
61	—	—	—	7 s	—	73	—	11^3	13 k	41
63	—	19 m	17	—	181	7 n	13 k	—	89	—
67	53	61	7gi	103	37	11	71	29	197	7
69	13 k	29	—	17	7 w	67	53	—	11	149
73	43	7	31	11	47	89	—	149	7	13
79	7 l	11 n	—	13	149	19	43	7	—	—
81	—	13	7	149	11	17	107	—	43	7 m
87	149	7	11	—	—	23 l	17	19 o	7 g	—
91	—	17 k	—	47	13^2	7	179	157	11 i	163
93	7 f	73	13	—	31	—	—	7 b	—	—
97	19	127	17	101	7 l	—	11	61	—	—
99	—	—	—	—	71	—	7	—	17	11 g

α	420	423	426	429	432	435	438	441	444	447
1	97	7	13*l*	—	—	41	—	—	7	—
7	7*h*	—	137	107	—	139	71	7	11^2	13*i*
11	43	29	—	11*q*	7	13	193	—	89	—
13	—	17*i*	43	13	79	53	7*f*	31	23	61
17	—	11	19	7	23	—	43	157	—	97
19	—	101	17*k*	167	11	7	29	—	43	197
23	—	—	7	—	—	71	13	—	31	7
29	13*t*	7	47	—	139	19*l*	41	—	7*f*	—
31	11	—	89	7	17	101	53	—	157	41
37	127	—	7	—	—	13*h*	59	19*k*	37	7^2*f*
41	17	13	—	23	11	—	7	37	19	—
43	—	7*k*	—	—	83	—	17	11	7^2	101
47	19	17*q*	11	67	59	7	163	131	13^2	29
49	7	—	—	29	61	11*n*	13	7^2*h*	—	73
53	11	41	13*h*	—	7*n*	97	—	67	—	—
59	137	—	29	$7i^2$	181	43	61	—	23	11*g*
61	—	11	37	—	—	7^3	23	13*p*	173	17
67	23*m*	13	—	—	7^2	19	—	29	53	89
71	—	7	71	97	—	11*h*	19	—	7	—
73	—	—	139	7^2	109	—	73	163	11*g*	—
77	7	31	—	11	13	—	17*l*	7	79	—
79	29	—	7^2*g*	—	113	—	11	—	19	7
83	—	11	—	53	—	41	7	17*k*	—	19
89	—	19*k*	—	—	73	7*g*	—	—	17	—
91	7^2	—	11	13	—	—	—	7*s*	—	47
97	11*p*	—	—	19*m*	29	—	7	193	—	—

β	421	424	427	430	433	436	439	442	445	448
1	—	109	—	7	19*p*	59	11*g*	—	—	71
3	71	—	—	—	13	7	43	—	191	11
7	13*o*	—	7	29	11*m*	—	23^2	—	—	7*n*
9	17	—	—	41	7*k*	—	19	11	47	—
13	23	7*w*	11^2	—	—	—	—	13*i*	7	41
19	7*f*	13^2	—	—	—	53	37	7	—	—
21	73	59	7*h*	11	—	181	167	—	211	7*i*
27	103	7*if*	—	17	37	—	13*m*	47	7	23
31	—	151	13*i*	37	—	7*k*	197	11	—	127
33	7*g*	—	151	23	17	—	—	7*v*	—	107
37	29	—	—	—	7*o*	11	53	31	—	13
39	—	31*n*	79	193	19	17^2	7	13*o*	11	—
43	17*n*	—	—	7*fg*	89	19	—	151	—	—
49	113	11*h*	7*m*	—	67	—	71	—	—	7*p*

γ	422	425	428	431	434	437	440	443	446	449
3	7	19	23	—	—	11 l	79	7	13 q	83
9	—	—	13 n	11	83	109	7	59	31	—
11	13 b	7	31	19	—	—	11	73	7	97
17	7 n	17 o	47	—	11	—	—	7 g	—	—
21	—	101	—	13 m	7	—	—	23 o	—	29
23	—	13	11 b	29	173	23	7 i	127	—	167
27	—	23 p	113	7 t	—	73	—	19	11	—
29	11^2	71	—	17 p	137	7	—	97	13	179
33	157	—	7 l	—	13^2	101	11	43	—	7^3
39	—	7 s	—	179	11^2	191	47	101	7^2	—
41	53	19	—	7	—	17 m	—	11 l	—	13
47	83	157	7	13	23	11 o	17	61	—	7
51	11 k	17	73	—	—	67	$7^2 l$	—	—	79
53	29 q	7	—	11	19	—	—	17	7	—
57	—	—	17	103	—	$7^2 i$	13	—	—	11 t
59	7	11 r	—	—	13	—	—	7	17 n	—
63	13	31	—	17	7^2	107	139	11 n	59	—
69	43	—	163	7^2	17	11 k	127	13	19	193
71	41	—	43	23	29	$7 g^2$	—	—	11 m	—
77	67	—	53	—	7	—	11	199	43	41
81	—	$7^2 f$	137	29	—	—	17	—	7 g	31
83	—	97	19 n	7 m	11 s	—	13	—	—	—
87	7^2	37	13	19	—	—	—	7 b	—	—
89	13	—	7 f	—	157	—	—	—	23 l	7
93	—	191	59	47	23 m	—	7	103	11 b	13
99	—	41	—	13	—	7	11 i	29	—	17

β	421	424	427	430	433	436	439	442	445	448
51	61	—	—	—	7 f	—	—	17 i	13 k	—
57	—	—	$11 g^2$	7	191	149	113	—	17	31
61	7 i	—	61	17^2	131	—	—	7	11	113
63	11	—	7 o	—	103	47	—	—	—	7 bg
67	149	—	—	—	17	13	7 f	—	41	—
69	—	7	19	13	31	—	—	—	7	11
73	181	—	—	19	11	7 b	—	—	29^2	23
79	—	107	11	23	7	31	13 b	—	—	—
81	—	23	179	67	13 q	$11^2 i$	7 t	—	109	37
87	—	—	—	11	43	7 x	—	67	—	—
91	31	—	7	41	—	—	—	13	17 p	$7 f^2$
93	—	11	—	—	7	13	29 o	—	19	—
97	—	7 g	—	71	—	37	—	11	7 k	17 i
99	19	—	127	7 q	—	89	23	31	103	59

α	450	453	456	459	462	465	468	471	474	477
1	11	89	31	197	47	7^2g	17	19 n	107	—
7	—	—	59	29	7^2k	—	—	17^2	—	11
11	19 k	7	17	31	11	—	—	—	7 g	—
13	—	113	—	7^2	37	193	13^2	11	17	—
17	7 s	—	11^2g	17 n	113	181	—	7 r	—	—
19	13	—	7^4	47	—	11	—	—	—	7 b
23	11	61	43	19	17	—	7	—	47	13
29	37	—	103	13	—	7 b^2	—	—	43	11
31	7^2	11 g	—	23	83	19 m	—	7	—	59
37	29	—	47	71	—	173	7	—	13 o	—
41	73	—	—	7	13	11	31	17 q	—	—
43	31	—	13	—	131	7 t	139	—	11 i	—
47	107	137	7	11	103	89	79	—	17	7 i
49	19	101	191	—	7	—	11	—	23	13
53	—	7 if	71	—	23	13	—	61	7	17 r
59	7 o	67	—	—	167	—	47	7	—	163
61	—	—	7 f	19 o	—	101	—	—	31	7
67	11 b	7	—	43	13	—	—	101	7	37
71	13	59	109	—	—	7	11	43	37	23 m
73	7 q	17^2	—	31	—	—	19	7 k	29	11 p
77	—	—	—	23	7 f	47	—	13 i	197	—
79	61	23	17	—	—	13	7 n	11	79	—
83	—	13	11	7	31	37	173	29	103	71
89	11	—	7 t	—	41	—	—	—	13^2	7
91	67	19	—	11 n	7 b	—	13	41	—	—
97	13	11	—	7	67	17	23	109	—	—

β	451	454	457	460	463	466	469	472	475	478
1	7 b	83	23	157	—	—	—	7 f	—	13
3	23 n	—	7	179	19	29	17 m	13	67	7
7	43	17	—	13	—	11 i	7	—	—	—
9	79	7 g	43	139	—	127	61	17	7 f	—
13	197	—	17	11 q	29	7	43	31	—	137
19	—	11	131	17	7 g	—	—	23	19 o	—
21	—	53	13	—	11	23	7	—	—	17 l
27	—	—	11	—	—	7	167	83	—	13^2
31	—	181	7 q	191	107	13 b	71	73	11 l	7
33	11^2	—	19 l	13	7	—	—	149	—	31
37	—	7	—	19	—	149	11 b	—	7	—
39	—	—	53	7	149	—	73	97	137	11
43	7	29	149	41	11^2	—	13 k	7 b	—	—
49	13 k	47	11	—	—	—	7 i	37	17	59

γ	452	455	458	461	464	467	470	473	476	479
3	17	—	163	—	7^2	—	11	—	181	—
9	53	17	19	7^2	11	13	29	—	—	23
11	29	71	61	13	—	7	53	11^2 b	47	—
17	103	23	—	107	7 i	11 m	—	—	17	—
21	11	7^2	—	17	61	19	13	79	7	173
23	41	—	—	7 f	13	—	59	37	—	17
27	7^2 g	53	—	193	17	—	31 n	7	97	11
29	31	11	7	163	29	83	131	19 q	—	7 o
33	—	—	—	—	59	17	7	11 g	19 k	—
39	19	13 m	23	29 n	—	7 f	17	—	—	—
41	7 k	—	—	—	—	43	—	7	11 t	191
47	—	37	19^2	—	—	—	7 fg	113	29 m	—
51	37	11 o	13	7 i	—	—	—	—	17	—
53	13 s	—	—	—	11 o	7	211	—	—	79
57	167	—	7	101	—	—	—	23 l	—	7 gb
59	—	29	11^2	31	7	19 k	—	13	—	199
63	—	7 k	—	13 r	97	101	19	—	7 f	—
69	7 l	—	—	137	31	—	11^2	7 u	73	—
71	17	199	7	—	—	—	103	127	13 i	7^2 f
77	19	7 b	13	61	—	29	179	11 s	7^3	—
81	—	19	11 p	—	53	7 o	23^2	—	—	—
83	7	79	17	—	23 p	11	197	7^2	41	13
87	11 k	—	—	—	7 l	13 s	—	—	43	47
89	—	—	109	11 bg	—	71	7^2 m	—	103	37
93	—	127	—	7	19	73	—	83	37	11
99	97	—	7 x	—	—	53	13	11 m	—	7

β	451	454	457	460	463	466	469	472	475	478
51	163	7 p	—	—	—	11	29	—	7	109
57	7	131	—	11 r	151	13 n	—	7 p	19	—
61	—	13^2	67	—	7 n	29	151	167	199	11 i
63	19	11	—	73	71	—	7	151	—	23
67	31^2	19	—	7	199	23	67	11	13	151
69	17	41	37	23	89	7 s	13	—	—	—
73	199	37	7 g	—	79	11	107	41	113	7^2
79	—	$7 w^2$	—	11 s	19	—	109	—	7^2	13 l
81	—	—	17	7 l	—	—	11	13	—	—
87	73	13	7 m	17	11	—	19	—	23	7
91	—	—	29	—	23	—	7^3	19^2	—	83
93	43	7 u	11 k	—	17	53	—	—	7 g	47
97	—	—	41	31	13 p	7^2	—	—	11	211
99	7 f	173	13^2	—	—	17 o	43	7 l	—	19

α	480	483	486	489	492	495	498	501	504	507
1	23	11	7 r	79	—	59	—	—	13	7
7	61	7 u	13	—	—	31	—	89	7 i	—
11	41	—	—	59	—	7 f	—	—	—	17 i
13	$7i^3$	—	173	41	29	67	109	7	11	13 q
17	—	19	61	11	7 x	13^2	31	23	—	41
19	31	211	—	13 r	83	23	7 f	—	127	67
23	—	11 k	—	7 l	—	—	—	—	—	—
29	—	31	7	113	19	—	13	—	211	7
31	43	17	11	167	7 g	—	—	—	29 n	97
37	11^2	—	17	7	53	—	19 p	181	31	113
41	7	—	127	109	41	107	11 k	7 ig	—	—
43	107	29	7	17	23	13 n	—	41	73	7 f
47	23	13	—	—	11^3	—	7	—	61	31
49	—	7	—	31	17	—	79	11 q	7	19
53	29	—	11	—	—	7	—	—	13	—
59	11 b	37	13 i	173	7 m	—	73	—	—	193
61	13	137	—	11	—	29	7 b	103	—	23
67	71	11	41	23	19	7 w	47	13 b	109	—
71	53	—	7 b	13	29	19	—	11	41	7
73	—	13 t	—	—	7	89	53	131	17	—
77	131	7	—	17 p	—	11	—	—	7	—
79	—	101	—	7	—	43	31	19^2	11 g	17 l
83	7	—	89	11 t	13 b	179	83	7 u	19	43
89	19	11 r	181	—	23	17	7	31	29	—
91	—	7 m	23 l	—	11	101	—	53	7	13
97	7	—	11 i	13	—	—	41	7 v	—	79

β	481	484	487	490	493	496	499	502	505	508
1	103	29	31	19	7	193	139	17	11	37
3	11	97	113	—	47	—	7	61	—	101
7	73	—	53	7	—	113	11 g	—	17	23 q
9	—	—	67	—	13	7 i	29	23 n	53	11 m
13	13	—	7	23	11	—	19 n	149	—	7^2b
19	—	7	11 p	—	149	29^2	—	13	7^2	89
21	—	41	83	7 q	31 n	11 g	—	—	19	—
27	17 i	79	7	11	107	—	—	—	—	7 r
31	—	19	—	—	—	31	7^2	—	13^3	11
33	127	7 fb	—	—	—	—	13 k	191	7	—
37	37	—	13 k	—	103	7^2	—	11	97	29
39	$7k^2$	59	17 q	19 l	—	—	—	7	—	—
43	31	193	79	—	7^2i	11	—	47	—	13
49	89	—	29 o	7^3f	61	131	199	109	—	—

γ	482	485	488	491	494	497	500	503	506	509
3	19 *p*	$7g^2$	37	—	127	23	31	11 *b*	7	109
9	7 *v*	179	—	—	—	11	43	7	13 *b*	—
11	37	139	7 *i*	67	—	—	13	—	11 *p*	7^2
17	13	7 *l*	—	—	—	83	11	67	7^2	59
21	—	11^2	—	—	73	7	—	—	223	13
23	7 *y*	—	—	—	11	19	—	7^2g	23 *m*	—
27	29	—	157	13	7 *k*	—	19	59	—	127
29	17	13	11 *k*	73	—	223	7^2	—	197	—
33	139	—	47	7	—	41	—	—	11	31^2
39	—	—	7	—	13	—	11	71	79	7 *i*
41	19	—	13^2b	157	7^2	—	163	—	89	11^2
47	—	43	—	7^2b	197	—	—	11 *k*	—	13
51	7 *t*	47	11	23	—	13 *p*	—	7	—	—
53	73	23	7^2	13 *i*	17	11	—	43	37^3	7 *l*
57	11 *o*	59	—	—	19^2	—	7	37	179	—
59	—	7^2	—	11 *o*	—	17	113	—	7	131
63	17^2	—	131	211	—	7	13	—	29	11 *o*
69	13 *q*	17	—	—	7 *n*	157	—	11 *i*	23	—
71	—	—	—	—	61	71	7 *k*	17	—	—
77	23	31	37	—	—	7 *g*	—	—	11 *b*	19
81	—	13 *n*	7	11 *b*	—	67	61	83	59	7
83	53	19	—	137	7	—	11 *l*	—	—	17
87	109	7 *f*	19 *m*	101	17 *o*	—	—	—	7 *g*	67
89	43	—	—	7	11^2	—	13	41	173	—
93	7	—	13	—	43	17 *l*	—	7 *k*	163	—
99	—	23	107	—	—	19	7 *b*	101	11^2	13

β	481	484	487	490	493	496	499	502	505	508
51	179	13	—	181	17	7 *o*	11 *i*	31	—	11
57	—	47	—	—	7 *f*	17 *k*	—	29	13	—
61	17	7^2k	—	71	13	53	47	—	7 *m*	81
63	—	—	11^2g	7 *p*	—	—	17	—	59	19
67	7^2	17	—	139	—	—	29	7 *p*	11	—
69	11 *l*	19	7	—	—	—	107	17	61	$7g^2$
73	67	—	17 *i*	31	97	13	$7f^2$	—	103	—
79	—	—	—	17	11 *u*	7 *q*	23 *o*	137	37	83
81	7	—	—	—	19 *k*	—	151	7 *f*	—	17 *o*
87	—	—	—	191	13 *l*	11	7 *n*	—	—	51
91	11 *g*	—	97	7	—	17 *n*	—	—	—	—
93	—	71	59	11	—	7 *m*	—	19	—	—
97	—	—	7	29	47	—	17^2	13 *r*	19	7 *f*
99	157	11	—	37	7	13	—	179	—	23

α	510	513	516	519	522	525	528	531	534	537
1	—	29^2	11	17 p	—	—	7 i	—	—	83
7	11	—	—	—	17 n	7 g	—	23	—	43
11	29	13	7 w	23 n	109	—	11	173	—	7
13	139	23^2	—	—	7	17	—	—	31	11 i
17	17	7	71	193	11 q	—	—	—	7 g	—
19	163	19 n	41	7	79	29	13 h	11^2	—	—
23	7 n	17	$11 i^2$	137	—	53	101	7	41	31
29	11	—	17	—	29	—	7	—	23^2	13
31	—	7	—	11	19	131	23	13 t	7 h	—
37	7 k	11 g	—	167	—	107	—	7	—	17 l
41	43	—	113	—	7 h	—	53	11	—	61
43	—	—	43	127	89	—	7	19	13	223
47	—	—	—	7 o	13	11 h	43	—	19 l	71
49	71	—	13 l	—	—	7	41	—	11 p	59
53	19	89	7 q	11	—	—	17	23	—	7^2
59	—	7fk	—	223	—	13^2	—	17 r	7^2	—
61	—	—	19	7 g	11	—	—	—	193	37
67	223	31	$7f^2$	157	—	—	29	79	127	7
71	—	47	163	—	167	—	7^2g	—	11	17
73	11	7 o	—	—	13	19	37	—	7	—
77	13	83	31	—	61	7^2l	11^2i	41	53	—
79	7	191	—	59	23	—	—	7 v	—	11
83	23	—	—	227	7^2f	—	—	13	79	—
89	47	13 s	11 n	7^2	—	43	—	—	89	19^2
91	19	17	—	—	—	7 f	227	43	149	—
97	37	103	17	11 l	7 m	149	13^2	—	61	23

β	511	514	517	520	523	526	529	532	535	538
1	137	7^2	13 o	149	—	23	—	—	7	11 u
3	13	11	149	7 hi	193	41	—	83	—	173
7	7^3	—	29	131	19	31	191	7 f	—	13
9	—	101	7 y	—	17^2	—	157	13	73	7
13	79	—	—	13	—	11	7	127	59	—
19	17 m	—	—	11	113	7	—	19	109	—
21	7 u	—	—	—	—	101	11 h	7	13 k	107
27	29 o	—	13 k	—	11 u	—	7	17 m	—	19
31	—	—	17^2	7	43	—	41	—	199	—
33	—	19	11	61	59	7 w	43	—	17 q	13 o
37	—	—	7 i	17	199	13	—	139	11 m	7
39	11	—	31	13	7	—	167	—	37	17
43	199	7	59	71	17	61	11	37	7	23
49	7	—	—	23 m	11	17 i	13	7	—	—

γ -	512	515	518	521	524	527	530	533	536	539
3	—	—	—	—	13l	7	—	151	11^2	19
9	41	19	103	107	7	—	11t	—	—	31n
11	83	—	197	31o	17	—	7	89	—	$11g^2$
17	—	—	—	13i	23p	7b	—	11n	—	—
21	17k	—	7f	—	19m	—	37	71	29p	7
23	181	67	29	47	7	11	17	—	—	—
27	11	7b	—	—	103	—	13	—	7q	—
29	—	227	—	7f	13n	67	19	17	—	199
33	7g	29	17	37	—	—	181	7i	—	11
39	—	—	—	17	41	23	7	11g	—	—
41	—	7n	47	23	229	13	29m	41	7x	17i
47	7	19	139	—	179	—	—	7	11	73
51	53	—	19	11^2	7s	17l	—	31	13	—
53	107	31	—	—	—	71	7fg	—	—	163
57	—	11p	13	7	—	—	17	229	—	79
59	13	47	—	43	11i	7	97	—	23	—
63	—	—	7m	—	23	19	47	17p	103	7g
69	167	7r	—	13	71	—	—	83	7fb	29
71	11s	13	—	7l	137	113	73	19r	191	31
77	47	—	7	—	97	89	—	—	13	7f
81	19	—	29	—	11g	47	7	—	—	23
83	—	7	13^2	—	31	—	109	11k	7	37
87	—	79	11r	23	73	7	—	197	37	—
89	7b	23	19	—	—	11	—	7l	53	13
93	11	—	—	19o	7	13m	—	107	—	—
99	43	—	—	7	47	37	29	67	—	11

β	511	514	517	520	523	256	529	532	535	538
51	—	23	7	—	13	37	—	11q	—	7^3
57	—	7	73	—	41	11	—	19	7^2	—
61	11	—	191	79	—	7	211	13b	19	—
63	7	53	37	11	—	13	—	7^2	29	61
67	19	13n	—	—	7	—	—	—	17k	11s
69	—	11	—	—	—	31	7^2k	—	—	103
73	73	—	23	7p	83	—	—	11l	13^2	17
79	61	—	7g	19	—	11	31	—	131	7p
81	13m	—	53	—	7^2	139	—	—	11	—
87	17	—	—	7^2	—	19q	11	13	41	—
91	7v	11m	67	13	—	—	19	7k	—	—
93	—	13b	7^3	113	11^2	23l	197	137	—	7
97	—	23	—	59	151	—	7u	223	—	—
99	—	7^2	11b	53	61	151	—	—	7gi	—

54000

α	540	543	546	549	552	555	558	561	564	567
1	—	13	—	7fk	—	—	41	—	—	—
7	53	11	7l	—	—	47	—	19	13	7
11	—	—	97	43	13m	—	7^2j	11	19	—
13	—	7	13	89	—	43	—	—	7	—
17	19	29	—	—	—	7^2f	—	17	—	43
19	7	—	193	—	—	59	—	7	11k	13
23	89	—	—	11	7^4	13	—	—	17	131
29	97	11^2	—	7^2i	—	—	—	37^2h	73	17q
31	71	—	—	167	11	7	31	—	—	—
37	—	67	11	137	7g	19n	—	73	—	—
41	13	7^2	101	—	37	—	19	31	7f	23
43	$11b^3$	31	53	7q	—	67	—	23	—	179
47	7^2	—	—	23	101	—	11	7g	47	—
49	—	17k	7n	—	—	13	—	—	19	$7f^2$
53	191	13n	31o	179	11	73	7x	233	—	19l
59	—	19	11	—	—	7	83	89	13p	211
61	7	—	47	17r	73	11	13	7v	131	31
67	13	—	—	11i	17	181	7k	—	—	—
71	139	—	23	7	19	61	—	—	149	11g
73	23	11	—	—	31	7h	59	13l	—	—
77	17	—	7w	13	167	149	71	11	—	7
79	41	13q	—	—	7r	—	17i	—	—	—
83	—	7h	149	—	59	11m	29o	19	7	—
89	7	137	17	11	13	—	—	7k	—	109
91	—	109	7g	127	—	23	11	83	17	7^2i
97	47	7i	83	43	11^2	53	—	—	7^2	13h

β	541	544	547	550	553	556	559	562	565	568
1	—	—	19	—	17	$7g^2$	—	43	—	79
3	7s	—	11	13	29	—	—	7^2m	—	43
7	61	41	227	67	7	17	37	—	11^2	—
9	11	—	—	—	19o	—	7^3	—	—	—
13	53	—	—	7l	—	19	11gh	67	31	—
19	13k	—	7	37	11q	—	199	17	—	7
21	—	—	—	—	7^2	—	—	11i	29	—
27	113	37	—	7^2	61	11g	—	59	—	—
31	7fi	13r	229	113	—	—	—	7l	—	17
33	—	29	7^2	11	—	—	—	53	—	7k
37	43	—	127	47	—	23o	7t	—	13	11
39	—	7^2f	19p	23	—	—	13^2	—	7o	113
43	29	—	13	19	—	7	43	11	—	—
49	173	—	53	—	7	11	—	—	193	13

γ	542	545	548	551	554	557	560	563	566	569
3	67	—	7	—	17	53	—	13 t	23^2	7f
9	151	7 g	23	—	67	17 l	—	11	7	—
11	23	19^2	59	7	—	—	79	—	—	—
17	—	—	7 o	—	151	—	13 m	199	11	7 q
21	59	—	13	11	157	—	7 r	17	41	—
23	13 p	7	73	199	19	103	11^2	151	7	—
27	211	11	109	—	43	7 i	179	23 m	17	13 l
29	7 t	31	—	29	11	23	43	7 g	—	—
33	193	23	—	13	7	—	137	—	—	17^2
39	73	—	29 t	7	—	139	—	53	11 i	97
41	11	—	173	67	—	7	—	103	13	—
47	17	—	13	—	$7z^2$	107	41	29^2	37	11 m
51	—	7	—	131	11 v	197	23	37	7	—
53	227	17	19	7	23	127	—	11 q	181	13^2
57	7 k	89	11	19	—	13	29	7 y	53	—
59	29	—	7 h	13	31	11 n	61	—	—	7 x
63	11	—	83	—	37	—	7	157	—	—
69	—	197	—	43	—	7 m	13 i	—	61	11
71	7	11^3	37	—	13 h	43	47	7	—	23
77	—	—	—	23	29	17^2	7	—	19^2	227
81	17 m	—	—	7	109	11^2	—	13	—	19
83	19	—	71	139	113	7 g	17	—	11	—
87	—	13^2h	7	11 l	—	—	—	113	—	7^2
89	233	79	131	229	7	47	11	17 m	83	—
93	—	7 f	17	97	211	—	—	—	7^2g	—
99	7	71	13 o	17^2	19 k	—	—	7^2	31^2	—

β	541	544	547	550	553	556	559	562	565	568
51	—	17	—	—	—	19 l	7	13	11 r	139
57	31	13 s	17	—	197	7	11	101	23	—
61	41	11	7	—	23 l	—	107	127	163	7
63	—	107	23	17 o	7 f	—	191	—	13 i	101
67	—	7 m	—	53	13	—	—	—	7	19 o
69	19	—	11 g	7	17	179	97	—	—	29 n
73	7 v	19 q	—	—	—	—	223	7	11 n	—
79	17	157	—	—	79	13	7 f	167	29	23
81	—	7 p	29	13 i	—	—	17 n	23	7 s	11
87	7	23^2	—	31	97	233	—	7fh	71	163
91	47	29	11 h	89	7 o	—	13 s	181	—	—
93	—	—	157	37	13	11 t	7 i	41	17	—
97	11 g	—	37	7h	31	—	—	19	—	—
99	83	—	—	11	—	7 w	29	—	—	17

α	570	573	576	579	882	585	588	591	594	597
1	7 b	—	—	—	11^2 g	19	127	7	191	227
7	109	17	11	79	—	41	7 m	—	—	—
11	47	223	53	7	—	—	23	13	11^2	29^2
13	11 v	37	17	29	23	7 g	103	—	19 r	211
17	23 n	13	7	—	—	163	11	31	—	7 i
19	19	31 p	157	17	7	139	131	—	—	11 t
23	127	7 i	29	—	11 u	43	59	—	7 g	—
29	7	—	11 g^2	53	—	107	89	7	67	—
31	13 o	—	7	19	—	11 h	—	29	103	7^2 k
37	—	7	—	11 k	—	—	17	13	7^2	31 o
41	—	17	—	13	139	7	29	—	—	11
43	7 l	11 g	59	—	—	—	19^2	7^2 b	—	—
47	—	—	17	—	7 r	127	83	11 i	—	—
49	89	—	—	167	31	—	7^2	—	13 b	149
53	59	83	—	7 b	13	11	229	149	—	—
59	—	41	7	11^2	17 k	31	71	—	37	7
61	43	19	23^2	149	7^2 l	157	11	67	97	13
67	149	—	—	7^3 g	11	—	37^2	—	—	59
71	7 m	103	101	29	—	37	17	7 x	—	—
73	—	—	7^2 f	—	19	—	113	47	—	7
77	—	181	137	—	101	19	7 g	17 s	11	23^2
79	11	7^2	—	37	13	—	97	23 m	7 l	—
83	13	—	37	23	167	7	11 r	—	17	191
89	—	—	—	103	7 f	41	—	13 l	19 m	17
91	37	29	31	—	71	13	7 q	11	41	—
97	—	—	—	59	97	7 f	—	—	—	—

β	571	574	577	580	583	586	589	592	595	598
1	11 l	61	7	31	173	—	—	53	13 k	7
3	17	137	19	11	7	—	13 k	73	157	79
7	—	7 s	13 k	19 p	199	103	—	—	7	11
9	13 k	11 b	—	7	—	29 p	—	—	—	—
13	7 o	—	—	—	—	—	—	7 f	—	13 p
19	—	67	—	13	29	11 w	7 i	—	53	41
21	239	7 g	197	17	—	31^2	—	—	7 f	163
27	7	—	—	—	17 q	23	11^2	7	13 i	29
31	—	11 k	—	—	7 g	—	31	61	59	19 q
33	19 m	79	13	131	11	17	7	—	37	—
37	17	19	—	7	—	191	—	37	29	53
39	—	71	11 l	127	227	7	17	—	—	13
43	—	17 m	7 w	—	41	13^2	—	—	11	7 y
49	—	7 l	17 p	—	19 n	223	11 k	179	7 q	97

γ	572	575	578	581	584	587	590	593	596	599
3	—	—	—	97	—	47	7	31	19	37
9	19	131	—	—	13	7	—	127	11	139
11	7*f*	17^2	13	—	—	—	—	7*n*	—	181
17	29	113	17*i*	89	—	71	7	23	—	11*g*
21	—	97	67	$7i^2$	11*q*	13	—	137	—	—
23	—	23*o*	53	13*b*	37	7	—	11	109	31
27	89	—	7*f*	37	—	—	67	41	—	7^2
29	151	—	—	—	7*b*	11*i*	—	79	—	—
33	11^3	7	151	61	71	—	13*i*	—	7^2	73
39	7*gb*	163	—	47	—	151	43	7^3	23	11
41	—	11	7	53	—	—	17*k*	—	19*p*	7
47	19*k*	7	—	—	211	13	137	17	7	151
51	—	13*i*	17*o*	—	—	7^2f	—	—	—	—
53	7	67	—	—	—	41	—	7*t*	11^3b	167
57	31	—	47	11*b*	7^2	—	73	—	13^2	—
59	—	—	—	19	53	67	7*fg*	—	—	17
63	173	11	13	7^2	17*i*	—	—	23*l*	—	61
69	—	23	7^2	—	59	17	—	—	—	7*g*
71	—	—	11	—	7	—	19	13	—	—
77	11*o*	13*p*	31	7	—	53	—	—	83	37
81	7^3	71	—	73	—	43	11*o*	7*b*	37	—
83	—	89	7	83	233	29	—	43	13	7*fi*
87	—	—	107	31	11*g*	—	7*k*	—	17	223
89	59	7*i*	13*t*	—	23	—	37	11	7	239
93	23*q*	—	11*i*	—	29	7*n*	—	—	—	17
99	11	239	—	—	7*t*	13	113	—	—	—

β	571	574	577	580	583	586	589	592	595	598
51	67	73	—	7	23*p*	89	167	193	17*m*	11
57	61	—	7*n*	—	13*u*	—	19*l*	11	—	7*b*
61	13	37	11*s*	—	17	—	7	19	—	31
63	—	7	47	31	—	11	—	—	7*u*	—
67	11	—	61	—	—	$7b^2$	—	13*q*	—	131
69	7	101	41	11	—	13	109	7	71	19*k*
73	—	13	—	—	7*m*	23	17	—	41	11
79	—	229	19	7	—	—	—	11*b*	13	—
81	211	47	—	241	79	7*y*	13^2	—	—	233
87	13*r*	—	—	29	7*i*	—	61	101	11	—
91	—	7*p*	—	11	—	19	—	211	7	13*b*
93	—	—	—	7*p*	—	—	11*m*	13	23	101
97	7	11	29	13*o*	23	79	—	7*p*	61	89
99	47	13	7*k*	—	11	—	41	19	107	7*p*

α	600	603	606	609	612	615	618	621	624	627
1	29	47	—	—	7^2	11	23	13 b	—	—
7	23	13	—	7^2f	97	—	19	173	17	73
11	7	41	—	17	—	—	113	7 i	139	11
13	—	11	7^2	—	41	157	—	179	13	$7b^2$
17	—	—	—	—	13 b	227	7	11	—	59
19	47	7^2	13	—	29	—	—	—	7 n	19
23	193	179	—	—	—	7fb	211	23 n	—	—
29	—	23 p	19	11 l	7	13	17	—	163	149
31	173	—	—	13 p	—	37	$7f^2$	—	149	—
37	—	—	—	—	11 i	7 s	—	—	29	43
41	—	83	7	149	47	19 o	13 u	—	17	7
43	97	—	11 n	—	7 g	—	—	—	41	—
47	13 m	7 n	—	59	73	—	23	29	7f	17
49	11 r	29	—	7	23	61	127	19	197	131
53	7 k	—	131	—	—	—	11	7 g	19^2	—
59	19 l	13	—	47	11	—	7	61	—	97
61	17	7	—	—	—	—	—	11	7	—
67	7	17 r	19 m	41	197	11 l	13	7 y	—	23
71	11 p	73	13^2	19	7	23	—	—	179	41
73	13	—	17 p	11 k	71	67	7.	79	—	—
77	—	173	47	7 m	29	139	43	97	—	11 g
79	73	11^2	—	17^2	233	7 i	—	13	43	67
83	—	—	7	13	—	—	19	11	—	7
89	—	7	—	71	167	11^2	199	—	7 x	37
91	—	131	137	7	—	17	59	—	11 gi	—
97	19	—	7gk	181	—	31	11 b	37 o	—	7

β	601	604	607	610	613	616	619	622	625	628
1	—	$11b^2$	101	—	59	229	7 n	—	—	—
3	—	7	—	53	11	—	103	17	7	13
7	—	29	17	—	101	7 g	31	—	—	181
9	7 m	193	11	13^2i	37	—	—	7	17	107
13	47	—	109	17 n	7 i	—	101	—	11	23
19	79	31	—	7 k	17	43	11 g	—	101	—
21	59	23 n	41	139	13 r	7	19	43	103	11
27	—	—	—	—	7	—	—	11	31	—
31	157	7 z	11	—	—	—	17	13	7	83
33	—	223	—	7	—	11 g	—	—	—	19
37	$7f^2$	13	—	67	83	—	241	7 b	23	31
39	—	19	7	11 m	—	53	23	109	—	7 q
43	137	—	19 k	—	—	—	7	67	13 b	11 l
49	—	—	13	41	31	7	—	11	—	17

ν	602	605	608	611	614	617	620	623	626	629
3	11 g	17	41	7^2l	—	—	—	—	—	—
9	—	—	7^2b	53	—	23	59	13	137	7fi
11	19	11	—	23	7m	13 q	—	—	17l	53
17	—	73	61	7	—	—	—	101	—	17
21	7^2	—	—	—	17	11 m	109	7l	13	—
23	—	29	7	19	239	—	13^2	—	11	7z
27	229	—	13	11	19 r	17	7	—	—	—
29	13 o	7	59	—	47	—	11	157	7k	—
33	29 m	11	127	113	23	7	17 o	83	—	13 q
39	59	—	83	13	7 u	107	—	17 i	—	—
41	107	13	11	—	—	29	7	31	37	113
47	11	191	71	47	43	7	—	—	13 t	19
51	—	151	7	—	13 l	—	11	—	31 p	7bk
53	89	19	13 m	—	7	37	—	23	—	11 s
57	—	7 o	19	23	11 n	—	—	127	[illegible]	157
59	—	23	—	7	41	151	229	11	—	13l
63	7	71	11^2	31	—	13	53	7s	223	79
69	11	37	—	—	—	19	7	47	29	—
71	—	7 b	29	11 u	—	223	—	97	7^2	—
77	7 x	11	17	131	13	163	23	7^2i	233	71
81	13	29	23	193	7	—	—	11 r	19	—
83	23	47	107	17 s	—	31	7^3	—	—	—
87	19^2	43	—	7	—	11 o	47	13	—	—
89	—	—	—	43	17	7^2g	29	89	11 o	—
93	—	13 s	7	11	—	61	31	43	71	7
99	17	7 f	—	19	89	29	—	23	7g^2	73

β	601	604	607	610	613	616	619	622	625	628
51	7 g	61	79	—	19	—	41	7	71	—
57	43	—	—	—	—	—	7 r	13	11^3	239
61	—	103	—	7fg	43	197	—	23	73	—
63	17	13	—	227	—	7 k	11 p	19 l	—	37
67	—	11 k	7	79	109	—	—	71	19 n	7^2
69	—	17	67	173	7 f	83	31	73	13	—
73	19	7 r	—	157	13	—	29	—	7^2	—
79	7	197	—	103	—	37	—	7^2m	11	227
81	11	31	7 i	17	—	—	—	61	—	7 g
87	139	7	89	13 n	17 k	—	—	199	7	11
91	23	241	31 n	—	11	7^2	—	167	—	61
93	7	—	—	199	29^2	17 i	47	7 f	53	109
97	17	—	11	107	7^3	103	13 i	—	—	—
99	37	101	163	—	13	11 v	7 b	—	59	31

TAB. I. DIVISORES

α	630	633	636	639	642	645	648	651	654	657
1	251	7	—	—	19 m	53	11 p	—	7	—
7	7	29 n	—	—	11 g	251	229	7 v	—	—
11	13 n	—	—	79	7	31	—	—	149	23
13	61	—	11	—	157	—	7 q	19 k	—	—
17	29 o	—	—	7 k	—	149	—	13	11 i	—
19	11 h	23	113	41	149	7 g	53	—	—	—
23	19 m	13	7 t	97	—	113	11 v	—	—	7 o
29	—	7 y	—	—	11	173	241	—	7 g	—
31	—	—	17 i	7	—	47	13	11 m	59	—
37	13^2	—	7	17	—	11	23	53	—	7
41	11^2	97	23	43	227	233	7 s	—	31	13^2
43	23	7	31	11	17	19 p	61	13	7	29
47	67	—	—	13	41	7	19	—	—	11 p
49	7	11 g	—	—	47	17	—	7 o	—	37
53	1[illegible]	—	53	31	7 u	—	—	11	29 n	47
59	—	17	—	7	13	11	79	23	67	19
61	19	—	13 s	167	179	7 k	37	17	11^2	—
67	—	—	—	47	7	—	11	—	17	13
71	59	7 f	—	17 r	—	13	—	—	7 q	89
73	—	127	41	7 gi	11	31	29	—	233	17 r
77	7	—	37	—	17 i	—	—	7	41	—
79	—	61	7 f	137	—	—	—	—	—	7
83	199	241	43	109	—	17 l	7 gk	—	11	157
89	13 k	—	—	61	53	7	11 h	19 q	43	—
91	7	—	—	89	239	—	—	7 u	79	11
97	—	—	—	—	113	13	7 w	11	—	19

β	631	634	637	640	643	646	649	652	655	658
1	89	13	11	7 o	—	—	—	113	17	29
3	—	19 q	—	29	—	7 f	41	—	31	23
7	11	163	7 i	—	107	23 r	47	197	13	7^2 h
9	223	—	—	11^2 k	7	—	13	61	109	—
13	—	7	13^3	—	73	—	139	—	7^3	11 m
19	7 v	—	—	—	—	19^2	—	7^2f^3	—	13 t
21	17 q	—	7	73	131	—	—	13 l	—	7
27	—	7 gh	—	43	—	—	—	19	7 fk	—
31	—	137	101	11	23	7^2	29	37 o	19	—
33	7 l	229	17 k	—	—	—	11	7	13 v	43
37	19	11 w	—	—	7^2 g	109	—	89	—	—
39	103	—	13	17	11	37	7	—	—	—
43	233	—	—	7^2	37^2	127	101	53	—	—
49	—	67	7^2	19	229	13	107	71	11 s	7 k

γ	632	635	638	641	644	647	650	653	656	659
3	7	11 k	—	13	—	89	—	7i	17^2	59
9	31	41	—	—	29	—	7 n	—	—	17
11	—	7 p	11	61	41	163	—	241	7^2g	19
17	7f	19	13	97	37	—	7y	7^2m	—	29
21	191	—	19	37	7	61	11 k	83	211	—
23	17	139	—	—	23	59	7^2	—	137	11 g
27	23	—	83	7	11	13^2	—	—	29 m	—
29	53	17 n	29 m	13	19	7^2	—	11	—	—
33	37	—	7f	59	—	19	—	79	—	7
39	11	7l	—	31	—	41	13	223	7	233
41	—	—	—	7^3f	13	101	193	19^2	41	23 q
47	—	11 r	7^2	23	17^2	—	29	101	—	7
51	19	103	67	—	—	73	7	11 g	—	—
53	43	7^2	—	—	—	13 b	—	—	7y	101
57	17t	13	—	—	43	7 l^2	67	—	—	—
59	7^2	—	19	83	73	31	17 p	7	11 q	71
63	41	17	—	11 i	7	—	—	163	13	—
69	151	11	13b^2	7z	23	239	31	131	97	41
71	13 m	151	23	—	11	7i	—	—	17	37
77	—	—	11	29	7t	211	59	13 q	—	17
81	—	7m	127	13	17	—	151	—	7f	—
83	11^2	13 u	193	7 r	—	—	37	151	19	—
87	7	—	29	—	59	17 n	11t	7	—	19 k
89	19	—	7	—	—	67	—	23	13 m	7f
93	167	19	181	23	11^2g	—	7 b	—	179	—
99	—	—	11 n	43	—	7	—	17	—	31

β	631	634	637	640	643	646	649	652	655	658
51	11	107	37	13^2	7l	17	—	23	—	—
57	137	23 m	103	7	139	19 o	17	—	—	11
61	7^2	17	—	29 q	11	—	13 i	7	53	67
63	83	—	7	—	13	—	167	11 b	—	7A
67	13 p	—	11^2b	—	191	—	7	—	173	—
69	181	7	43	79	59	11	—	—	7bi	199
73	11	—	—	17	—	7	43	13	23	19
79	—	13 i	23 q	139	7 b	—	181	29	—	11 r
81	23 o	11 l	—	—	—	71	7	97	—	—
87	179	—	227	19	31^2	7	13	—	—	41
91	29	173	7 g	—	19	11	17	109	107	7
93	13	—	—	107	7	—	103	—	11 u	131
97	—	7 q	131	11	71	31	—	17 k	7	13 n
99	—	—	—	7	—	23 l	11 i	13	—	—

α	660	663	666	669	672	675	678	681	684	687
1	13	—	—	149	17 s	7	—	11 o	73	23 l
7	149	61	43	23	7	11 i^2	—	13^3	67	127
11	11 b	7	59	13	—	—	19 p	—	7 l	—
13	251	13	29	$7f^2$	—	181	17	—	37 p	—
17	7	17 q	—	61	—	107	73	7 n	31	11
19	107	11	7 m	—	—	251	—	17	13 i	7
23	103	29	17	—	13	—	7	11^2	53	19
29	—	19	—	17 m	23 n	7 f	—	193	41	—
31	7	113	23	—	—	—	29	7	11	13 b
37	—	—	37	13 i	71	—	7 f	61	—	—
41	—	11 n	103	7 w	19	17 l	179	—	89	53
43	211	—	—	—	11	7	—	83	—	—
47	—	—	7	—	—	—	13 b	—	—	7^2k
49	257	43	11 w	—	7 g	31	19	23	—	—
53	13	7	—	23 o	109	43	—	17 i	7^2f	197
59	7	—	191	—	103	—	11 m	7^2g	17	29
61	31	—	7 z	29	—	13	79	—	223	7 fi
67	—	7 i	163	167	137	—	—	11	7	—
71	—	31	11^2i	193	—	7^3	67	—	13 k	—
73	7	—	61	—	—	11	13·k	7	—	97
77	11	—	13 k	—	7^2	—	103	79	—	—
79	13^2b	41	131	11	19	—	7	29	31 q	109
83	—	—	—	7^2	61	19	—	41	—	$11g^2$
89	—	197	7^2	13	—	—	29	11	—	7 m
91	29 p	13	17	31	7	257	—	19 n	—	—
97	157	67	—	7 b	173	23	43	47	11 g	89

β	661	664	667	670	673	676	679	682	685	688
1	7^2i	23	—	11	13 m	—	—	7	—	107
3	—	—	7 g	—	17 n	67	11	241	61	7
7	—	11	41	37	—	—	7 z	—	—	83
9	—	7 r	19	113	11 l	17 o	59	—	7	13 u
13	17	—	—	19	83	7 g	113	—	131	—
19	37	17	137	29	7 s	—	23	—	11	—
21	11	127	—	—	23	19	7 m	17	—	—
27	89	181	53	97	13	7	—	—	17 l	11
31	13	—	7	17	11	—	—	31^2	—	7
33	41	31	—	—	7	47	—	11	19	17
37	—	7	11	43	17^2	239	41	13 l	7	19
39	19 s	29^2	—	7 t	—	11^2g	—	—	—	23 o
43	7 f	13 i	31	—	—	17 k	—	7	—	43
49	29	—	—	—	—	61	7 b	139	13	11^2

γ	662	665	668	671	674	677	680	683	686	689
3	239	73	11	—	7	79	13	167	31	—
9	11 g	—	—	7	—	—	47	83	19 k	—
11	73	227	71	11	—	7 h	23	—	—	137
17	23	11	109	41	7	13	17	53	59	—
21	—	7gh	—	—	—	241	251	11	7	41^3
23	47	—	19	7 p	191	—	—	17	163	157
27	7	71	17	19	—	11 q	59	7 p	13	—
29	103	—	7	—	—	89	13	—	11 h	7 p
33	107	—	13 r	11 h	—	—	7	23	—	29
39	—	11 k	89	—	17	7	19	37	—	13
41	7	—	—	—	11	—	—	7 g	83	71
47	31	13	11 s	83	—	37	7	41	19	—
51	97	61	—	7 r	37	—	17	—	11 x	19^2
53	11 i	—	—	—	—	7	—	29	13	53
57	59	19 m	7	—	13	—	11 k	17	71	7
59	173	101	13 n	239	7 k	—	—	197	—	11
63	23 p	7 n	—	47	11	—	29	137	7 h	—
69	7	—	11	—	19 r	13^2	43	7	—	17
71	—	—	7 o	13	109	11 t	—	—	43	7 s
77	191	7	—	11 m	—	—	19	101	7	23
81	79	139	47	—	—	7 k	13	19 s	173	11
83	7 h	11	—	23^2	13 l	—	103	7	—	101
87	13	—	211	—	7 m	53	—	11	—	149
89	151	17	—	—	—	—	7 v	—	149	19
93	—	—	151	7 l	—	11	149	13	73	—
99	167	13 q	7 i	11 o	—	151	—	—	—	7

β	661	664	667	670	673	676	679	682	685	688
51	83	7 f	—	19	47	—	13	131	7^2	31
57	7 g	—	241	—	193	29	—	7^3	179	37
61	—	41	101	—	7	11	—	—	17 n	13
63	109	—	—	199	31 o	71	7^2i	13 s	11 k	—
67	127	—	179	7fg	23 l	157	—	19	—	17
69	—	13	23	47	—	7^2	11 n	233	191	61
73	—	11	7	—	89	31 n	101	67	47	7
79	—	7	43	—	13 v	—	—	—	7A	—
81	17^2	19	11 g	7^2n	43	53	157	—	—	—
87	11^2	17	7^2l	73	79	113	—	23	107	7 g
91	—	—	—	23	—	13 o	7 f	47	113	—
93	37	7^2k	17	13^2	19	139	—	31	7 o	11
97	53	29	—	229	11^2	7 i	97	163	—	—
99	7^3	—	67	17	—	—	53	7 f	181	—

TAB. I. DIVISORES

α	690	693	696	699	702	705	708	711	714	717
1	—	37	7 t	13 i	—	—	101	97	11	7
7	151	7	47	53	—	—	11 o	211	7 B	—
11	—	11	151	—	61	7^2	13^2	17 q	—	—
13	7	—	67	151	11 g	107	19	7	—	—
17	13	—	43	139	7^2	151	23	19^2	17	29
19	—	103	11	29	23 p	97	7 u	—	—	—
23	23	181	—	7^2	—	109	—	13	11 p	17
29	—	13	7^4	—	—	—	11 q	—	—	7
31	—	19 o	179	—	7 x	251	193	83	61	11
37	17 m	—	83	7 A	—	—	13	11 l	—	23
41	7^2	—	11 g	—	—	23	—	7	199	—
43	13 q	17	7	23	19	11^3	—	—	—	7 n
47	11	31	257	113	199	19 q	7 l	—	37	13
49	29	7	17^2	11	—	—	—	13^2	7 s	157
53	199	223	—	13	163	7	—	—	—	11^2
59	53	43	41	—	7	37	59	11	19	73
61	—	139	—	43	17	41	7 r	—	13 k	—
67	—	71	13 k	31 n	29	7 b	—	—	11 w	43
71	17^2	—	7 n	11	—	—	131	—	—	7
73	—	173	19^2	167	7	—	11 b	103	—	13
77	67	7 fb	—	19 l	31	13 t	—	109	7	—
79	37	—	59	7 g	11	163	—	17 r	—	179
83	7 v	—	17	47	67	—	73	7	—	23
89	59	—	227	17 k	—	—	7 gi	257	11 u	—
91	11^2	7 k	—	—	13	73	—	—	7^2	17 o
97	7	29	—	—	—	227	31	7^2	19 r	11 t

β	691	694	697	700	703	706	709	712	715	718
1	43	—	47	—	$7f^2$	17	—	13	127	19
3	19	—	43	—	229	13	7^2	11	—	59
7	29	13 i	11	7 w	167	—	17 p	31	23	—
9	—	31	—	—	—	$7^2 f$	23	—	43	—
13	11 t	41	7 k	53	—	241	—	17 s	13	7
19	—	7 q	13 m	—	19	—	—	229	7 b	11
21	13^2	11	113	7^2	—	—	—	67	37	—
27	—	—	7^2	239	—	—	19	13	—	7 m
31	73	—	103	13	53	11	7	19 k	233	109
33	257	$7^2 g$	137	59	61	23 n	89	—	7 f	29
37	47	23	—	11	37	7	—	—	—	—
39	$7^2 b$	—	—	—	31	—	11	7	13	19^2
43	—	17 s	97	89	7 g	41	61	191	29	—
49	—	37	19	7	103	31 p	—	—	—	—

γ	692	695	698	701	704	707	710	713	716	719
3	—	7	29^2	11	23	17	19 n	113	7 r	13
9	7	11 v	—	13	181	—	17	7 t	101	—
11	67	13	7	—	11 n	31	—	29	19	7
17	19	7	11^2	—	67	—	47	—	7 g	—
21	—	19	—	—	13	7	29 m	73	11 h	23 r
23	7 fl	37	13 o	—	—	197	—	7 k	67	71
27	37	251	—	23	7	107	11^2	—	41	17
29	107	23	—	19	—	—	7 w	—	83	11 g
33	—	31	—	7 p	11 i	13	251	—	—	—
39	—	—	7 f	—	—	127	—	—	71	7 p
41	17	197	211	—	7 l	11 s	19	—	31	—
47	—	17	—	7 f	13	263	23	—	—	—
51	7 g	157	23	29 o	—	139	227	7	137	11 m
53	23	11	7 b	31^2	47	—	41	—	79	7 i
57	—	—	—	—	—	173	7	11 g	131	47
59	—	7 i	—	17	—	13	—	—	7 l	227
63	—	13	19	—	31	7 f	179	—	—	—
69	113	73	109	11	7	—	—	23 l	13 n	79
71	53	29	107	47	19	17 k	7 fg	149	—	—
77	13 w	41	—	—	11 p	7	17 n	137	229	167
81	29	17	7 u	—	—	37	—	41	43	7^2 g
83	79	149	11	—	7	—	31	13 h^2	97	—
87	193	7	17	13	—	71	67	—	7^3 f	—
89	11	13 r	47	7 n	—	29	—	—	17	193
93	7 i	—	37	17	157	—	11 k	7^2 m	—	—
99	23^2	79	—	—	11 gl	83	7^2	—	—	—

β	691	694	697	700	703	706	709	712	715	718
51	—	199	11 k	—	—	7	—	43	—	13
57	11	—	79	13 h	7 k^2	—	—	—	163	181
61	23 m	7	—	—	71	19	11	—	7	—
63	—	—	—	7	17	—	29	—	—	11 q
67	7 o	—	—	—	11	—	13 r	7	59	—
69	263	127	7	41	13	17	—	11^2 i	—	7
73	13 h	—	11	79	—	29	7	263	19	41
79	11 i	17 t	—	—	—	7 k	—	13	31	—
81	7	—	31	11 k	—	13	—	7 h	47	—
87	43	11	19	109	59	—	7	—	17	—
91	—	—	101	7 hi	43	223	—	11	13	29 n
93	—	—	71	29	—	7	13 p	—	—	17
97	—	—	7 g^2	191	17 o	11	—	83	—	7
99	13	—	223	—	7 z	19 t	—	37 o	11 k	—

α	720	723	726	729	732	735	738	741	744	747
1	89	17	79	—	71	31	7g	—	47	11
7	13 l	—	17	—	19	7	23	11	37	—
11	107	167	7fk	—	179	19 r	31	37	—	7g
13	23 m	—	—	17	7	11 o	223	13	—	—
17	11	7	—	13 v	211	—	97	137	7	—
19	—	13	101	7f	17s	37	—	19 q	—	—
23	7	31	—	—	37	—	—	7	19	11
29	17 i	151	59	233	13p	—	7 r	11 k	263	—
31	—	7	13 n	—	67	23^2	17p	—	7^4	—
37	7 o	—	19	—	—	151	47	7^2h	11 u	13
41	61	—	17	11 i	7	13	41	151	—	31
43	—	73	—	13 m	—	251	7^2f	—	17 l	41
47	—	11	—	7h	89	—	—	53	109	—
49	109	71	—	—	11	7^2i	—	—	—	17
53	—	—	7A	—	17m	—	13^2i	29	—	7s
59	13 k	7	113	—	—	17	—	—	7f	—
61	11	269	—	7^2	61	—	233	—	19	—
67	19	—	7^2	131	41	13	—	—	113	7f
71	97	13 i	—	43	11	—	7t	17	—	—
73	—	7^3	—	—	47	29p	31	11^2	7	23
77	—	157	11	—	—	7k	—	—	13 h	37p
79	7^2	—	—	19k	127	11	13	7	71	—
83	11	—	13	59	$7i^2$	—	—	31	211	17 r
89	—	191	—	7	83	—	37	—	—	11 g
91	—	11	157	47	—	7	19	13^2	163	29
97	17	13	139	—	7n	—	—	—	23 o	—

β	721	724	727	730	733	736	739	742	745	748
1	—	7	—	37	23	11	67	—	7l	131
3	—	17	23 l	7	—	89	263	—	11 g	19 m
7	7	61	—	11	13	—	—	7	—	239
9	—	19 n	7gh	—	—	—	11	—	—	7
13	37	11 l	19 p	—	167	—	7	47	269	79
19	41	139	—	—	157	7g	193	—	43	23
21	7	—	11 t	13 o	17i	83	29	7k	—	—
27	11 x	23 q	—	103	—	17t	7s	199	—	—
31	17	—	257	7	—	29	11^2g	—	—	—
33	53	113	—	199	13	7u	17	19	73	11
37	13 m	17	7	—	11 s	—	107	61	19	7
39	—	107	—	—	7	211	—	11 h	131	67
43	19	7 x	11 h	—	71	—	—	13	7k	—
49	7f	13	23	17	41	47	73	7	127	29^2

γ	722	725	728	731	734	737	740	743	746	749
3	103	—	47	41	11	7	43	67	61	—
9	163	31	11	29	7	—	13	19	—	173
11	—	59	17	113	13	11	7A	—	—	23
17	257	127	—	$11b^2$	—	7	—	—	29m	19
21	—	47	7B	—	—	—	—	13	71	7^2f
23	—	11i	—	83	7b	13r	79	—	—	—
27	—	7g	19	—	101	—	—	11l	7^2	31
29	—	29o	67	7m	97	17	181	239	37	—
33	7b	—	173	—	—	11	101	7^2n	13	—
39	29q	17^2	13^2	11t	23m	19	7^2	79	101	137
41	13	7p	23	—	271	37	11r	17	7	—
47	7	—	97	193	11^2	29	—	7gi	17	149
51	—	—	263	13b	7^2	—	—	149	19	241
53	—	13	11n	191	—	131	7v	—	—	17
57	19	37^2	41	7^2	17l	—	103	—	11^2	23
59	11	—	—	149	—	7o	31	23r	13	—
63	127	149	7^2	23	13	17	11	—	197	7
69	—	7^2	—	19	11	71	17	31	7	61
71	—	31	—	7	—	—	—	11	89	13w
77	—	—	7l	13^2	—	11i	—	—	53	7
81	11	181	31	—	197	89	7i	—	17k	97
83	41^2	7	—	11	—	—	23	—	7q	167
87	—	29	23	163	43	7y	13o	73	—	11b
89	7k	11	—	—	13	113	43	7	19	31o
93	13u	229	—	53	7	109	—	11	113	19
99	197	19	269	7	67	11	—	13s	—	37

β	721	724	727	730	733	736	739	742	745	748
51	23	53	7i	11l	—	—	—	41	—	$7b^2$
57	59	7f	31	43	109	73	13	—	7	—
61	—	—	13l	—	—	7b	—	11p	—	—
63	$7g^2$	233	—	—	—	19	37	7C	173	43
67	—	—	—	31	7q	11n	17i	23	—	13^2
69	—	—	53	89	—	23	7	13l	11	—
73	—	23^2	61	7fg	239	—	—	17^2	—	—
79	89	11^2	7n	—	—	—	29	—	17o	7i
81	19l	—	73	107	7f	—	167	59	13	103
87	37	173	11g	7r	—	31	241	—	—	—
91	7	71	83	—	79	59	23	7	11	—
93	11	—	7	19	23	—	61	—	97	7g
97	23p	—	—	67	19	13	7fm	—	—	—
99	17m	19	43	13	29	—	—	191	7	11^2

α	750	753	756	759	762	765	768	771	774	777
1	179	257	19 k	7^2	181	113	—	—	17 l	13 p
7	107	—	7^2	13	—	—	89	83	11 m	7 b
11	—	127	—	11 u	17	—	7	29	199	—
13	—	$7^2 l$	83	—	—	19	11	59	7	—
17	—	11 o	—	89	199	7 b	13 i	67	—	23 m
19	7^2	109	—	31^2	$11 g^2$	—	—	7 k	—	—
23	13 l	—	47	23	7	59	17	233	139	—
29	—	—	—	7	31	103	—	13 b	11	19
31	11 i	71	53	—	—	$7 l^2$	—	137	—	—
37	—	—	43	—	7	—	—	—	211	11 n
41	—	7 q	—	—	11 l	—	43	—	7gk	17^2
43	101	59	67	7 i	—	—	13 k	11	43	—
47	7 v	—	$11 k^2$	173	19	41	—	7C	—	—
49	13 k	151	7B	53	—	11	31 n	179	41	7 l
53	11	—	—	151	—	37	7	—	73	13
59	47	179	—	13	—	7	151	19 m	29	11
61	7	11gb	29	37	—	—	101	7 w	71	—
67	271	—	17	—	53	23	7 x	—	13 s	19
71	41	23 l	31	7	13	11	—	—	—	83
73	37	19	13	17 o	89	7	—	229	11	—
77	193	—	7 i	11	83	73	59	71	—	7 o
79	—	43	—	—	7 b	—	11 l	113	—	13 m
83	—	$7 f^2$	—	—	—	13 p	—	79	7	—
89	7 b	—	—	—	—	19 l	23	7	—	107
91	61	—	7 f	—	23 m	191	17	—	—	7
97	11	7	59	—	13	—	131	17 i	7	—

β	751	754	757	760	763	766	769	772	775	778
1	13 r	—	17 t	—	41	7 m	11	—	19	—
3	7	—	—	—	—	—	53	7 o	17 q	11^2
7	19 s	—	—	17^2	7 f	—	—	13	179	29
9	—	73	—	29	137	13 v	7	11	—	17 k
13	31	13	11	7	17 u	23	—	—	—	—
19	11	53	7 l	19	167	17	—	37	13 u	7
21	43	199	—	11	7	193	13 t	31 q	—	59
27	13	11	41	7	127	19 n	43	29	—	223
31	7	—	—	—	37	—	19	7fb	31 o	13
33	—	241	7 m	139	—	197	107	13^2	23	7
37	227	—	53	13	23	11	7 l	—	17	277
39	29	7 g	23 n	—	97	173	47	—	7fi	—
43	163	37	—	11 m	—	7	—	—	—	17 i
49	—	$11 i^2$	211	113	7 g	—	—	—	—	—

γ	752	755	758	761	764	767	770	773	776	779
3	157	—	7^3 g	—	—	11 i	—	23	71	7 m
9	—	7^2 k	41 p	11^2 b	109	79	53	97	7	13^2
11	—	—	47	7 y	43	41	11	13 i	—	17
17	—	13 n	7	103	11	—	—	—	—	7
21	19 n	—	—	163	—	17	7	167	—	67
23	—	7	11 t	—	—	73	—	—	7 g	29
27	—	—	191	269	13	7 A	17 k	53	11	149
29	7 f	47	13 i	—	23	277	—	7	149	—
33	23	—	—	19	7 t	—	11 q	17	29	—
39	—	—	181	7 w	11	13	41	—	17	59
41	67	—	149	13	—	7 i	—	11 x	—	41
47	47	31	73	—	7 u	11	—	—	—	23
51	11	7 p	101	271	89	23 q	13	—	7	—
53	—	—	—	7 fk	13	—	29	103	19 t	137
57	7 g	—	31	—	101	—	251	7 p	79	11 i
59	17 i	11	7	—	157	59	263	—	—	7^2 n
63	73	19 o	107	—	—	29	7 E	11 g	37	53
69	—	13	—	59	47	7 f	—	—	101	—
71	7	—	17	19^2	—	—	37	7^2	11 k	103
77	—	—	23	17	31	—	$7 f^2$	—	173	—
81	83	11	13^2	7	—	—	—	223	—	29
83	13	—	—	29 n	11 b	7^2	19	—	131	—
87	79	131	7 n	47	—	31	157	19	—	7 g
89	—	269	11	61	7^3	17	127	13	—	167
93	17 p	7	29	13	—	41	—	193	7 f	23
99	7 m	17	71	23	227	61	11 p	7	—	—

β	751	754	757	760	763	766	769	772	775	778
51	223	197	13	59	11^2	—	7	67	—	127
57	17	61	11 v	19	29	7 q	41	23	—	13 r
61	—	59	7 x	23	19	13	—	—	11^2	7^3
63	11	17 k	239	13	7	31	—	—	—	—
67	—	7	—	29 p	—	—	11	—	7^2	—
69	—	163	17	7	—	43	19	—	—	11
73	7	71	—	127	11 r	—	13 m	7^2 i	—	43
79	13	—	11 y	—	—	—	7^2	—	23	47
81	—	7 o	—	—	17	11	23	109	7	19
87	7 k	19 l	—	11	—	13 b	167	7 t	—	71
91	17	13	19	—	7^2	53	—	—	—	11 w
93	—	11	—	47	79	271	7 b	37	31	—
97	29	17	—	7^2	241	—	37	11	13 q	61
99	139	103	229	—	19	7	13	17	73	—

α	780	783	786	789	792	795	798	801	804	807
1	7 *f*	—	83	—	—	107	—	7	37 *o*	—
7	—	—	—	19	103	43^3	7 *g*	—	—	11^2k
11	181	—	13	7	11 *i*	23	—	—	191	43
13	13 *b*	71	127	23 *q*	113	7 *n*	—	11	97	—
17	—	—	7 *f*	53	37	131	—	113	29 *q*	7 *g*
19	61	17^2	29	—	7	11	19	13	137	53
23	11 *o*	7 *u*	—	13^2	227	281	—	19	7	89
29	7 *v*	29 *n*	61	—	—	67	—	7	—	11 *o*
31	—	11	7 *q*	17	—	—	97	227	13 *k*	7 *i*
37	73	$7i^2$	13 *k*	193	17 *s*	—	29	127	7	—
41	—	—	19	—	—	7 *f*	—	—	257	263
43	7	157	—	89	109	17	—	7 *D*	11 *v*	13
47	17	—	31 *p*	11	7	13 *l*	—	—	—	—
49	—	47	—	13	19 *p*	—	7 *fb*	—	—	—
53	89	11 *b*	—	7	41	19 *r*	47	—	43	23
59	—	127	7 *b*	23	—	—	13	71	61	7 *y*
61	251	23	11	281	$7g^2$	—	—	19	17	—
67	11 *q*	—	97	7 *l*	31	251	—	—	67	17
71	7 *i*	109	151	157	17	47	11 *r*	7 *g*	—	37^2
73	101	181	7	151	—	13	—	—	—	7 *f*
77	163	13	29	—	11	17 *m*	7	—	23	—
79	—	7	19 *o*	—	—	—	23^2	11 *n*	7	—
83	113	103	11 *k*	19	—	7	17 *n*	181	13 *o*	—
89	11 *m*	43	13	—	7 *q*	—	—	17 *r*	—	—
91	13	277	—	11 *p*	37	19 *s*	7 *B*	—	—	173
97	29	11	—	197	179	7 *y*	109	13 *m*	101	43

β	781	784	787	790	793	796	799	802	805	808
1	—	—	7	13 *s*	—	—	—	11 *k*	79	7^2b
3	83	13 *n*	211	199	7	23	—	139	19^2	—
7	37	7 *k*	—	41^2	71	11	—	—	7^2m	19
9	19	89	31	7	—	—	41	—	11 *g*	—
13	7	19	—	11^2	13	—	157	7^2	—	211
19	191	11	223	31	—	103	7^3	97	73	—
21	—	7 *b*	—	19	11	—	229	—	7	13
27	7	—	11 *b*	13	23	—	257	7 *w*	—	131
31	23 *p*	107	131	—	7^2	—	67	—	11	—
33	11	41	43	17	—	—	7 *i*	—	29	—
37	—	—	—	7^2	—	97	$11g^2$	19 *o*	—	229
39	—	—	71	—	13 *b*	7 *m*	—	—	43	11
43	13	47	7^2	—	11	73	—	29	239	7
49	17	7^2	11	137	—	23	31	13	7 *n*	—

γ	782	785	788	791	794	797	800	803	806	809
3	—	29	—	—	271	13	7f	131	—	17
9	197	—	—	239	11	7s	19	—	149	—
11	7	—	53	—	—	79	29m	7^2f	—	—
17	17p	—	269	61	13o	11	7^2k	—	19	—
21	11g	233	23^2	7z	43	29	—	31	—	19
23	19k	17m	—	11	—	7^2	43	47	37	—
27	137	19	7	67	—	61	79	13n	—	7f
29	—	11^3	17	53	7^2	13	191	—	—	—
33	—	7g	31	—	—	71	163	11u	7	—
39	7	—	—	—	19n	11^2	—	7k	13	29
41	—	—	7^2	29	17	23	13q	—	11	7m
47	13^2	7^3	37	—	53	17	11i	—	7o	61
51	17	11n	29	—	—	7	—	19	—	13^2
53	7^2	—	—	—	11m	173	17^2	7g	59	—
57	139	17	—	13	7	—	223	107	—	73
59	—	13	11u	—	181	47	7	17l	79	19
63	61	251	17	7p	229	31^2	23s	—	11	—
69	23o	—	7i	17	13	—	11l	—	—	7p
71	29	—	13	41	7	241	—	179	—	11b
77	—	—	—	7	19q	—	—	11	—	13
81	7r	179	11v	—	—	13i^2	73	7	—	47
83	—	—	7s	13	61	11	53	31	—	7k
87	11^2	89	—	—	101	23	7b	—	—	109
89	79	7C	—	11k	29	73	283	19	7	—
93	59	—	—	—	—	7	13t	17	19m	11n
99	13i	53	257	29	7o	199	173	11	17q	107

β	781	784	787	790	793	796	799	802	805	808
51	31	19	61	7k	73	11g	17	—	109	233
57	—	67	7	11	—	—	37	17	—	7
61	47	31	17o	173	61	37	7	83	13	11
63	—	7f	79	—	19	29o	13	—	7b	—
67	—	—	13w	17	—	7i	—	11	—	193
69	7g	131	227	37	139	—	211	7	23m	17u
73	—	97	37	107	7bk	11	—	—	197	13
79	—	—	—	7fg	—	17p	—	—	19	31
81	37	13	—	31	163	7	11^2	43	61	29
87	41	—	—	—	7f	—	—	—	13	47
91	—	7	—	139	13m	—	41	17	7l	23
93	—	53	11gi	7	—	—	167	23	83	41
97	7	—	—	19k	—	—	—	7	11b	—
99	11	23	7	83	—	—	—	59	—	7^2g

TAB. I. DIVISORES

α	810	813	816	819	822	825	828	831	834	837
1	—	11 *i*	13	—	7	17 *k*	31	—	—	—
7	59	—	79	7	—	—	17	41	—	13 *q*
11	7 *v*	17	—	101	229	11 *g*	—	7 *m*	239	97
13	—	31 *p*	7 *z*	13	19	109	—	17	11	7
17	—	233	17	11^2	—	19 *p*	7	—	—	—
19	—	7	—	—	—	179	11	43	7 *h*	—
23	—	11	31	17 *t*	—	7	13 *k*	101	—	29
29	13 *k*	167	—	—	7 *h*	—	113	97	19	101
31	—	—	11 *o*	—	—	—	7	59	—	31 *n*
37	11 *r*	163	—	—	—	7 *g*	—	—	—	—
41	—	13	7 *D*	67	—	59	11 *h*	71	181	7^2
43	—	—	19	—	7 *m*	197	37	29 *q*	—	11 *k*
47	—	7	—	19^2	11	23 *n*	—	17 *u*	7^2*g*	83
49	—	—	—	7 *k*	233	—	13	11	—	89
53	7	—	11 *g*	—	83	31	29	7^2	17	61
59	11	—	37	41	43	—	7^2*i*	137	—	13 *h*
61	103	7 *s*	127	11	—	—	41 *p*	13	7	—
67	7 *n*	11 *g*	—	—	—	—	173	7 *E*	19 *k*	211
71	—	—	—	—	7^2*k*	—	79	11	—	19
73	17 *i*	—	23 *r*	—	29	71	7	31	13	—
77	—	19	—	7^3	13	11	179	—	—	—
79	89	17	13 *t*	73	—	7 *q*	67	223	11	199
83	—	97	7^2	11 *l*	107	269	—	193	31	7
89	131	7^2*f*	—	163	19 *t*	13	—	41	7	23
91	83	199	151	7 *gh*	11	—	—	23	29	—
97	—	23	7 *f*	167	17 *q*	151	19	271	—	7

β	811	814	817	820	823	826	829	832	835	838
1	—	—	—	43	—	—	7 *g*	19 *l*	11	47
3	11 *w*	7 *l*	—	—	13^2	17 *p*	—	—	7 *x*	181
7	13 *h*	127	—	—	—	7	11	—	113	43
9	7	—	101	—	53	—	17	7	37^2	11 *i*
13	29	17	41	—	7 *f*	—	—	13 *n*	23	—
19	—	13	11 *hi*	7	263	—	283	—	47	79
21	23	—	71	—	191	7 *fl*	101	—	17^4	109
27	31	107	—	11	7 *i*	53	13	—	101	17
31	—	7	13	—	17 *l*	19	127	—	7	11
33	13 *x*	11^2	37 *q*	7	281	—	239	—	103	—
37	7 *u*	31 *n*	—	—	137	17	197	7 *fk*	—	13
39	41	—	7	—	—	23	—	13 *i*	139	7^2*l*
43	53	23	43	13	67	11^2	7 h^2	—	19	—
49	19	79	—	11	—	7	109	17 *s*	29 *p*	191

γ	812	815	818	821	824	827	830	833	836	839
3	—	149	179	7 n	19	191	—	11	13 s	—
9	17^2	—	7 gl	47	23	11 w	—	227	—	7
11	13	37	23	157	7 t	107	17 i	—	11^2	—
17	241	—	—	7	73	181	11	13^2 h	—	31
21	7 o	11	17	13	—	—	61	7	—	—
23	—	13	7	41	11 s	—	—	97	17	7 i
27	43	—	47	17	139	—	7 l	103	241	23 o
29	29	7 i	11 p	—	31	—	79	23	7 g	17
33	—	—	19 s	23	13 h	7 r	43	167	11	—
39	—	67	—	—	7	17 m	11	—	—	—
41	137	73	223	—	19	97	7	—	—	11 g
47	113	—	—	13 v	29	7	—	11	233	127
51	31	—	7 f	113	41	83	53	17	23	7 u
53	193	—	—	—	7	11	23^2	19 o	—	37
57	11 y	7 t	23	29	—	—	13	—	7 hi	59
59	23	—	109	$7f^2$	13	—	—	31	269	113
63	7 gi	—	71	—	—	—	—	7	—	11 h
69	181	—	—	127	—	37	7	11^2 g	31	—
71	67	7 p	19 m	—	—	13	—	263	7	131
77	7 h	29^2	41	37	67	23 t	—	7 p	11	79
81	—	23	37	11 m	7	—	251	199	13 o	137
83	—	17	—	—	—	19	7 fg	—	67	—
87	29	11	13	7 s	—	—	19	61	53	—
89	13^3	83	17	—	11	7	—	—	—	47
93	—	139	7	—	—	—	—	89	127	$7g^2$
99	—	7	—	13	—	—	23	—	7 f	19

β	811	814	817	820	823	826	829	832	835	838
51	7	47	29	—	—	—	11	7^2	13	71
57	—	—	13 i	31	11	—	7^2	—	—	—
61	277	29 r	—	7 i	—	131	23	139	—	17
63	—	—	11	137	23	7^3	—	53	—	13
67	23	41	7	—	31	13	163	—	11 v	7
69	11 q	257	—	13 s	7^2 o	19^2	29	—	193	—
73	—	7 C	—	—	—	47	11 i	—	7	—
79	7	59	53	211	11	29	13^2	7	—	37
81	—	17	7^2	79	13	89	—	11 u	19 r	7 k
87	19	7^2	17^2	23 p	—	11	31	37	7	149
91	11^3	19	89	103	47	7	37	13 p	—	—
93	7^2	227	263	11 h	—	13	149	7 w	179	43
97	—	13	157	53	7 x	41	—	31	—	11 l
99	—	11 m	—	19 l	17 n	—	7 v	—	41	53

α	840	843	846	849	852	855	858	861	864	867
1	167	7	11	59	—	13	239	29	7	277
7	7f	—	19t	197	139	37	53	7	71	31
11	—	59	211	19o	7^2n	233	11l	—	$13b^2$	—
13	29	—	191	—	—	—	7gk	—	—	11
17	—	—	13k	7^2	11t	—	—	—	103	17
19	13k	—	37	—	31	7i	—	11	89	—
23	73	37p	7^2f	163	—	—	19	71	—	7g
29	11	7^2	—	13q	—	31^2	—	43	7	—
31	17	13^2	—	7f	29	—	—	—	19	43
37	19	11^2b	7D	157	—	23	—	—	13t	7
41	31	19k	53	29^2	13x	113	7	11o	—	127
43	229	7	13h	173	—	131	—	—	7r	—
47	—	—	47	—	—	$7f^2$	—	277	137	223
49	7	—	—	17i	163	—	293	7m	11l	13
53	—	67	—	11	7i	13	—	101	—	—
59	—	11	—	7r	—	67	23	29	31	101
61	—	29	31	—	11k	7h	19	—	—	53
67	—	239	11p	—	7g	41	17	199	—	—
71	13l	7h	227	31	71	—	43	—	7f	—
73	11	139	—	7t	269	83	79	17n	43	19
77	7	—	17^2	—	53	—	11n	7g	—	107
79	83	19	7	—	107	13l	157	—	17	7^3f
83	47	13	19	17	11	23t	7	—	197	—
89	—	—	11	37	17l	7	—	79	13	59
91	7o	—	—	—	19u	11m	13	7^2	—	229
97	13	37	—	11	—	—	7^2	—	67	29o

β	841	844	847	850	853	856	859	862	865	868
1	37	—	—	7	197	—	17m	—	—	11g
3	31	11	71	167	—	7^2	—	13i	23	61
7	151	—	7	13^2	23	—	271	11b	19l	7
9	241	13p	23l	—	7^2	59	—	—	—	47
13	19^2	7m	—	151	—	11p	53	73	7b	—
19	7t	29o	—	11s	13	—	151	7E	241	17
21	—	—	7^3g	—	41	—	11w	151	31	7x
27	—	7^2	193	—	11	—	29	23^2	7q	13
31	—	—	—	23	—	7g	—	53	—	31
33	7^2b	23	11	13m	—	19	—	7A	—	71
37	—	—	—	—	7w	29	19	83	11	—
39	11	17	101	277	61	—	7	—	—	37
43	—	—	83	7	31	—	11g	—	37	—
49	13	—	7	—	11	41	61	—	23r	7i

γ	842	845	848	851	854	857	860	863	866	869
3	7k	—	137	—	41	—	17	7	11	43^2
9	107	—	—	—	223	13i	7f	17	257	233
11	—	7	—	13	—	—	—	—	7	11
17	7r	223	89	47	229	—	—	7fi	37	23
21	—	—	11^2	—	7	23	13^2	37	19g	17
23	—	—	271	23	13	11	7	—	29^2	—
27	11gi	181	—	7	—	59	—	173	—	—
29	—	137	41	11v	—	7n	—	131	—	—
33	131	—	7	—	37	—	227	13l	41	7f
39	—	7g	43	19	—	83	97	11q	7	—
41	61	17	37	7	43	179	139	—	23	227
47	—	59	7bk	—	—	19	13	79	11	7
51	173	—	13t	11	—	—	7i	—	73	—
53	13	7q	53	17	—	29	11	—	7	89
57	109	11	—	31o	97	7	47	—	193	13
59	7	—	—	—	11b	191	41	$7g^2$	19	—
63	—	103	113	13	7l	139	89	67	79	19k
69	17	19	—	$7k^2$	—	199	—	—	11	—
71	11q	23	—	53	127	7	17t	—	13s	29
77	71	83	13	19	7	31	—	17	—	11
81	271	7p	17	103	11i	—	59	—	7^2l	—
83	89	41	29	7p	73	109	—	11	17	13
87	7	251	11	17	—	13	31	7^2o	23	37
89	31	—	7u	13	53	11^2	19k	—	—	$7b^2$
93	11x	29	23	—	17q	—	7^3	19	—	—
99	—	31	73	—	193	7^2b	13n	—	181	11^2

β	841	844	847	850	853	856	859	862	865	868
51	19p	79	—	17	7z	97	23n	11	41	—
57	23	—	131	7l	17	11g	43	—	101	—
61	7f	13w	—	—	—	—	67	7	—	—
63	—	—	7	11^2i	—	17	31q	—	107	7
67	17	—	29n	257	19	—	7	281	13	11r
69	73	7f	103	97	—	—	13b	—	7y	—
73	41	17	13	241	59	7	149	11^2k	—	109
79	—	23	17	149	7	11	127	19^2	—	13o
81	—	—	149	—	—	47	7v	13	11b	283
87	29	13u	—	—	103	7	11	—	—	17i
91	—	11	7	—	17	—	—	—	131	7
93	59	19	—	—	7f	67	113	—	13	31
97	269	7	19	43	13	17v	23	—	7z	113
99	—	—	11g	7	23q	43	—	211	—	67

α	870	873	876	879	882	885	888	891	894	897
1	19^2	67	17	11 t	193	7 q	—	—	13^2k	271
7	167	11	13 k	17	7	67	—	—	29	109
11	—	7	79	—	—	61	—	11	7 r	283
13	—	—	—	7 i	17	—	—	—	—	13 u
17	7 m	—	41	—	19	11 g	—	7 l	—	73
19	173	29	7	13	47	17 o	—	—	11^2	7^2
23	17	—	—	11	—	—	7	—	223	23 q
29	29	11 b	—	23	83	7	13	19	37	53
31	7	23	—	—	11 g	223	211	7^2b	—	61
37	—	—	11 m	47	—	29 p	7^4	—	17	19
41	—	167	—	7 b	—	37	73	13	11 q	43
43	11 o	19	—	—	79	7^2g	—	97	—	17
47	61	13	7 i	31	17 l	—	11 o	239	23	7
49	—	113	—	37	7^2	73	23	59	—	11 o
53	263	7	23 n	281	11 v	17	—	—	7 g	—
59	7	—	11 g	—	—	19 s	17	7 q	—	—
61	13 n	199	7^2	—	—	11 y	—	163	137	7
67	83	7^2	29	11^2	61	31	—	13 i^3	7	—
71	—	41	—	13 u	103	7	181	23	17 i	11
73	7^2	11 g^2	73	—	41	23	—	7	131	107
77	19	23 l	43	—	7	101	31 q	11^3	—	17
79	31 r	59	—	97	43	283	7	157	13	—
83	—	—	—	7	13	11	—	101	43	—
89	73	31	7	11 i	—	—	103	—	109	7 B
91	17 q	281	—	—	7	—	11	79	—	13
97	251	17 r	—	7 g	11 k	19	—	191	31	—

β	871	874	877	880	833	886	889	892	895	898
1	7 k	71	—	—	—	41	19	7	—	89
3	—	—	7ſb	—	227	251	—	—	37 o	7
7	—	—	229	—	233	—	7 g	37	11 x	31
9	11	7	139	17 m	13	—	67	—	7 i	—
13	13	61	239	283	47	7	11 s	—	—	19 l
19	—	19 p	—	—	7ſm	23	—	13	—	—
21	—	—	—	23 p	—	13 b	7	11	—	—
27	151	—	37	19 o	—	7 f	17	—	—	43
31	11 z	17 n	7 y	47	19	263	113	—	13 v	7 o
33	—	—	59	11 r	7	61	13	17 l	—	—
37	79	7	13 b	—	—	151	—	—	7	11
39	13	11	—	7	—	137	19 m	233	17 k	—
43	7 s	—	—	17	23^2	—	29	7fi	151	13
49	—	157	47	13^2	17	11	7 A	31	149	—

γ	872	875	878	881	884	887	890	893	896	899
3	29 *m*	13 *r*	—	19	7 *w*	107	—	—	—	11^2
9	37	—	277	7 *o*	211	43	—	11 *k*	13 *t*	—
11	—	—	—	17 *v*	—	7 *il*	13 *o*	31 *p*	—	47
17	13	—	137	—	7 *b*	79	—	—	11	—
21	—	7	53	11	29	—	—	179	7^2 *m*	13
23	—	—	31	7	—	17^2	11	13	19 *r*	—
27	7 *b*	11 *w*	71	13	—	83	127	7^2	—	19
29	19	13	7	—	11	—	17	—	47	7 *l*
33	83	17 *i*	—	31	191	89	7^2 *k*	157	—	139
39	23	—	17	53	13	7^2	269	41	11 *l*	—
41	7 f^2	—	13 *l*	19	59	—	—	7	17	53
47	43	—	107	181	241	—	7	47	157	11 *gb*
51	—	29	59	7^3	11^2 *b*	13	—	199	37	293
53	—	—	—	13	197	7 *m*	19 *p*	11	—	23
57	—	—	7^2 *f*	199	53	17 *k*	—	19	—	7 *v*
59	71	—	103	23	7	11	29 *n*	193	—	—
63	11	7^2	41	131	—	37	13^2 *b*	—	7	—
69	7^2 *g*	67	—	—	—	29	—	7 *b*	—	11
71	197	11 *i*	7	37	—	—	—	—	—	7
77	—	7	—	—	103	13	281	139	7 *k*	—
81	—	13	—	109	23	7 *f*	229	—	—	17 *u*
83	7 *n*	—	23	163	19	47	—	7 *F*	11 *m*	—
87	191	—	—	11	7	19	—	—	13	29^2
89	41	—	179	29	107	—	7 *fg*	71	—	—
93	—	11	13	7 *p*	—	—	41^2	—	257	31
99	—	251	7 *l*	89	—	—	139	—	19	7 *gk*

β	871	874	877	880	883	886	889	892	895	898
51	—	7 m^2	—	191	53	—	—	149	7 *f*	19
57	7	19	127	173	149	—	11	7 *o*	13 *y*	59
61	43	11	19 *m*	107	7 *g*	—	17	—	—	23
63	101	149	13 *p*	83	11 *l*	—	7 *v*	23	—	73
67	67	47	—	7 *k*	97	—	43	17 *s*	—	—
69	61	23	11 *x*	—	19	7 *r*	—	—	43	13 *m*
73	179	—	7	29	67	13 *i*	193	—	11 *b*	7 *n*
79	—	7	61	—	—	71	11	73	7 *u*	17^2
81	—	—	41	7	31	—	101	19 *n*	29	11
87	—	89	7	59	13^2	131	23 *r*	11	101	7
91	13 *i*	—	11 *k*	137	157	31	7	29	—	—
93	17 *k*	7 *l*	—	—	37	11^2	—	—	7	241
97	11	59	—	37	—	7	—	13	—	—
99	7	17	19	11	109	13	61	7	—	—

α	900	903	906	909	912	915	918	921	924	927
1	—	73	7^2p	—	11	37	—	31	—	7ho
7	—	7^2i	11	—	223	13	—	—	7p	—
11	—	13	19^2	—	197	7h	—	—	11m	83
13	7^2f	—	31n	229	53	—	—	7	—	23l
17	—	37	—	—	7y	23^2	11h	251	13	—
19	—	181	—	23s	19	71	7g	—	—	11
23	—	41	13	7m	11	19	—	17	29	—
29	197	59	$7f^2$	79	—	—	229	181	17	7g
31	—	103	—	—	7	11r	131	13i	—	47
37	179	13	233	7f	—	239	—	199	23	—
41	7i	61	—	211	23	—	—	7	97	11
43	127	11p	7k	199	—	31	29	—	13^2	7
47	53	167	—	—	13	43	7	11	193	163
49	17	7	13i	103	—	83	53	43	7q	137
53	—	—	269	19	—	7fl	31	—	59	—
59	—	—	—	11	7	13	97	157	—	23n
61	113	109	17	13	263	19t	7f	23	—	—
67	—	23	71	17	11	7C	—	37q	—	—
71	—	—	7	—	107	—	13n	61	89	7l
73	—	—	11	29	7gh	—	—	—	19m	113
77	13^3	7	—	—	97	—	79	—	7f	19^2
79	11i	—	—	7o	37	17	139	—	—	—
83	7h	19u	29r	37	—	—	11	7g	23	31o
89	—	13h	23	—	11p	67	7	—	—	—
91	23	7n	89	19	—	—	43	$11h^2$	7w	—
97	7t	—	—	—	—	11^2	13	7	17	71

β	901	904	907	910	913	916	919	922	925	928
1	11	—	13	17r	7	139	29	137	233	—
3	13l	—	—	11	—	47	7i	—	—	17r
7	—	—	61	7	17o	101	73	19k	—	11^2g
9	251	11	—	—	—	7k	—	13o	79	—
13	97	23	7	13	127	17^2	107	11y	71	7
19	227	7	83	—	53	11	17	—	7	101
21	—	19	257	7	29q	—	—	—	11g	—
27	—	31	7g	227	271	59	11t	—	67	7z
31	193	11	—	29p	—	—	7k	149	17	—
33	173	7	41	—	$11i^2$	43	149	—	7	13n
37	23	—	31	59	149	7gi	89	—	37o	17p
39	7x	—	11w	13q	241	—	—	7	29	263
43	109	149	103	181	7	113	—	—	11q	227
49	—	151	—	7	167	37	11g	29	19	—

γ	902	905	908	911	914	917	920	923	926	929
3	—	7^2	—	17 k	13 x	—	—	241	7	61
9	7^3	29	71	31	17 i	293	—	7	11	53
11	11 s	—	7	179	—	—	101	—	37	7 g
17	—	7 u	197	13 p	113	41	19 l	—	7 B	11
21	83	131	—	—	11	7	17	19 p	23	—
23	7	—	—	293	—	37^2	23	$7f^2$	—	43
27	—	—	11 k	—	7 n	29	13	17	—	—
29	23	—	61	—	13^2	11 m	7	127	211	19 u
33	11 g	—	—	7 q	—	—	—	—	17	199
39	—	37	7 i	—	61	199	31	13	—	7fb
41	31 o	11	—	—	7	13	—	107	—	—
47	—	—	—	7 l	19	23	83	—	—	41
51	7	23 m	47	—	109	11 i	—	7 x	13	—
53	17	83	7	—	—	—	13 w	—	11	7^3
57	43	137	13 l	11	—	—	7	—	—	—
59	13 r	7 b	43	—	—	89	11	19	7^2m	—
63	—	11	—	—	—	7	43	—	19	13
69	19	41 q	89	13	7 w	163	23	—	—	31
71	—	13	11^2	17 m	23 o	—	7^2	71	—	239
77	11 l	53	19	73	17	7^2	—	—	13	109
81	—	239	7	19	13 m	—	11^2	—	—	7 n
83	137	—	13	—	7^2	17	—	—	—	11 x
87	17 q	7	—	67	11	263	71	—	7	—
89	—	157	97	7^2	191	19	17	11 n	59	13 k
93	7	17 w	11	—	—	13 k	19 n	7 u	—	—
99	11	—	17	—	—	41	7 s	11	—	113

β	901	904	907	910	913	916	919	922	925	928
51	17	29	151	83	13	7	—	—	—	11 k
57	89	17^2	47	23 n	7 m	151	—	11	—	—
61	29	7	11 n	41	103	71	—	13 q	7^2	—
63	—	61	17 i	7	211	11 g	41	257	151	—
67	7 f	13	139	19	—	31	—	7^3	—	—
69	37	—	7	11 b	—	29^2	—	—	—	7
73	—	—	43	61	—	—	7^2	53	13	11
79	31	173	13	—	23 l	7^2	19 q	11	43	131
81	7 g	—	23	—	—	17	59	7	—	293
87	—	41	—	79	—	277	7 b	13 m	11 i	29
91	—	17	163	7^2g^2	59	—	67	41	53	19
93	19 q	13	—	71	—	7	11	17 t	—	—
97	—	11 i	7^2b	—	—	47	—	—	29 m	7 k
99	—	—	29 m	—	7 f	107	197	23	13 b	—

α	930	933	936	939	942	945	948	951	954	957
1	—	13	—	—	—	11^3	7 l	—	—	—
7	17	—	—	11	—	7 k	113	—	13 o	—
11	281	23	7 p	—	13	29	—	—	73	$7f^2$
13	47	11 b	13 i	—	7 p	—	59	227	—	—
17	191	7	179	19	71	47	53	11	7 p	—
19	167	—	17	7	—	31	—	73	—	13 n
23	7 A	—	251	—	59	11 g	—	7 D	37	—
29	41	—	—	11	—	—	7 ik	251	—	29
31	31	7 u	109	29 o	17 k	—	11 n	—	7	—
37	7	—	—	—	11 g	17 u	—	7	19	—
41	13 b	31	29	—	7	—	—	89	—	19
43	19 s	269	11	37	73	—	7 b	—	—	67
47	—	17^3	37	7	79	—	—	13^2	11	—
49	11^2	277	71	—	307	7 g	—	17 l	31	23^2
53	—	13 p	7 b	47	—	23	11	—	53	7
59	—	7	73	17	11^2 i	—	29	43	7 g	31
61	29	89	229	7 m	—	—	13	11 o	—	17 p
67	13	73	7	—	107	11	19	59	—	7
71	11	—	47	—	31	17	7	19	—	13 r
73	163	7	283	11	—	—	—	13	7 k	—
77	—	—	113	13	23	7 s	17	—	307	11
79	7	11 g	23	—	29	271	79	7	—	19 v
83	—	—	—	—	7	—	239	11 b	—	—
89	—	47	19	7 l	13	11	—	—	17 o	—
91	127	61	13	193	—	7	31	—	11	—
97	—	59	43	—	7 i	—	11	23	29 n	13

β	931	934	937	940	943	946	949	952	955	958
1	157	7 f	—	23 t	181	13 i	43	31 n	7^2	—
3	—	23 m	—	7 g	11	—	—	—	43	—
7	7 q	—	83	—	—	89	—	7^2 l	—	149
9	17	29	7 f	—	—	37	107	19	149	7
13	—	109	31	41	37	—	7^2 g	—	11 i	—
19	13^2 i	—	—	149	257	7^2	11	—	23	—
21	7 r	103	17 n	167	—	—	23	7 t	59	11 m
27	23	—	19	17	—	13 l	7 v	11^2	—	79
31	—	13	11	7^2 i	—	173	59	—	—	61
33	—	233	67	—	17 m	7 f	—	—	83	47
37	11	223	7^2	271	29	101	139	131	13	7
39	—	41 p	—	11 y	7	17 i	13 u	—	—	239
43	17	7^2	13	157	—	31 p	19^2	23 o	7	11
49	7^2	17 k	241	—	—	—	—	7 f	—	13 w

γ	932	935	938	941	944	947	950	953	956	959
3	11n	—	19	139	67	7y	—	13	—	29
9	83	13	—	—	7	—	—	191	67	11
11	17	11	—	—	19	53	7^3	—	23	—
17	31^2	17	23	—	263	7^2	13	—	—	—
21	73	41	7g	—	—	11x	—	199	—	7v
23	13v	—	17	61	7^2o	—	167	19l	11	—
27	53	7m	—	11p	—	—	—	—	7i	13q
29	—	—	101	7^2b	89	43	11r	13	—	—
33	7i	11^2	103	13^2	—	61	29^2	7	—	23p
39	—	89	107	23	—	211	7	—	59	197
41	—	7^2k	11i	47	—	17	101	67	7g	37
47	7^2f	139	13	31	—	—	17	7r	101	—
51	—	17	—	—	7C	41	11	97	—	229
53	—	—	127	—	29	19	7n	17v	41	11^2g
57	—	—	17	7	11m	13n	19	167	23	—
59	179	—	47	13	59	7	23	11	17^2	—
63	—	—	7fk	17l	—	193	—	47	271	7
69	11t	7	37p	—	17	97	13v	—	7x	19
71	19	137	—	7f	13^3	—	—	283	29	—
77	37	11q	7	41	—	—	31	127	241	7
81	—	—	269	53	107	—	$7b^2$	11gk	163	41
83	—	7l	223	19	—	13k	—	—	7	53
87	—	13k	—	97	19	7f	—	17m	103	—
89	7	31	—	131	61	—	—	7	11	—
93	29	173	—	11	7	—	—	—	13h	59
99	79	11u	13m	7	53	47	61	19	83	17

β	931	934	937	940	943	946	949	952	955	958
51	—	113	7s	163	—	—	—	13h	19q	7
57	19	$7g^2$	29r	—	157	103	269	—	7fh	—
61	59	19	—	11h	127	7	—	—	—	257
63	7	—	—	—	197	181	11z	7m	13	17
67	151	11l	41	109	7gh	137	23	—	227	37
69	—	151	13	19	11k	41	7	47	—	—
73	23	211	79	7z	19	17	37	—	31	—
79	—	—	7	—	—	13	17n	—	11	7
81	11p	—	191	13	7A	73	19	151	—	—
87	—	—	—	7	37	—	43q	—	61	11k
91	7	—	71	37	11	23^2	13	7	17	—
93	41	—	7	23	13r	—	—	11	109	7^2i
97	13u	—	11	73	—	281	7o	233	—	17
99	—	$7i^2$	97	—	—	11	—	157	7^2	41

α	960	963	966	969	972	975	978	981	984	987
1	—	23 r	—	7E	13	—	11 b	—	19	89
7	19m	193	7n	—	11	281	47	17l	—	7s
11	67	19n	17	—	41	—	7z	13	—	—
13	—	7	11	199	—	13^2	—	41	7h	—
17	—	13m	79	17	67	7	29	59	11k	—
19	7fl	61	53	19	191	113	23	7D	—	17
23	131	—	23	103	7bi	—	11	—	13u	269
29	109	—	13	7t	11	17	—	—	—	—
31	13y	—	71	—	—	7	19^2	11^2	257	—
37	137	—	41	31 r	7l	11	227	13	173	—
41	11	7	241	13	—	103	—	17k	7^4	293
43	—	13	—	7f	47	23	—	—	—	19
47	7	23s	127	29	31	—	—	7^2	17	11q
49	139	11i	7	67	79	—	—	61	13	7
53	—	—	19	—	13	—	7^2	11	—	17n
59	—	167	163	—	—	7^2f	—	103	—	61
61	7	173	—	47	19	—	—	7n	11	13v
67	17	29	—	13	23	43	7fo	89	—	283
71	23	11	—	7^2	211	—	—	127	59	43
73	191	17	277	—	11n	7r	97	19	—	—
77	29	—	7^2	37	89	—	13	31	19v	7C
79	—	31	11^2b	—	7g	—	—	—	—	—
83	13i	7^2	109	293	—	—	—	47	7f	173
89	7^2n	113	31	—	271	23	11^2	$7g^2$	149	223
91	307	41	7i	23	17s	13	53	149	—	7f
97	—	7q	—	—	149	17	223	11x	7	31

β	961	964	967	970	973	976	979	982	985	988
1	17	—	11s	—	—	7w	47	283	13	—
3	7	149	—	—	—	11i	13b	7	137	29
7	11	17r	13p	—	7	—	19	—	—	—
9	13	229	97	11	13p	—	7v	17r	23	—
13	223	67	17	7	23	—	179	—	29p	11g
19	277	—	7o	13b	307	31q	—	11	—	7i
21	19	13	311	—	7	41	181	—	83	17
27	97	211	197	7y	—	233	—	—	$11g^2$	37
31	7m	—	—	11	13	17	—	7	37	23
33	251	73	7g	19	131	89	11l	23	—	7^2
37	—	11^2	—	23	19q	163	7b	193	211	—
39	127	7k	—	—	11	251	37	31	7^2	13
43	79	—	89	53	311	7gl	—	17	—	97
49	—	43	—	107	7	—	41	19	$11b^2$	—

y	962	965	968	971	974	977	980	983	986	989
3	17	11 m	7	—	257	41	23	197	151	7 v
9	23 q	7 b	131	19^2	13 s	199	—	37	7	—
11	—	103	11 g	7	29	—	—	17	31	—
17	11	—	7	—	61	19 n	—	—	17	7 g
21	—	263	—	17 l	37	13	7 fi	—	—	31
23	—	7	—	13 m	—	79	83	—	7 w	11 k^2
27	41	—	—	—	11 b	7 k	61	—	—	—
29	7 s	83	37	23 o	—	—	167	7 f	19 l	—
33	—	37	11	137	7 m	17	13	107	53	19 o
39	11 g	19	179	7	139	43	17 w	29	—	—
41	157	29	113	11	—	7	—	43	—	163
47	109	11 u	—	19	7	13 w	—	—	23	—
51	29	7 g	—	—	19 k	239	71	11	7 b	53
53	101	—	23	7	—	67	31	59	47	—
57	7	—	—	—	41	11	—	7	13	17
59	—	223	7 B	—	—	29	13 i	41	11	7 u
63	—	61	13	11^3	—	59	7	19 m	—	—
69	—	11	157	—	29	7	281	—	—	13 k
71	7 b	269	73	—	11	—	101	7 gk	79	19
77	43	13 bi	11	—	107	—	7	—	101	29
81	—	—	19	7	43	277	—	131	11	—
83	11	59	17 o	157	71	7 t	43	37	13	31^2
87	73	—	7	—	13	—	11 n	—	29 o	7 x
89	—	—	13 l	17	7 i	—	47	—	—	11
93	—	7	—	83	11	19	233	61	7 k	—
99	7	29	11 k	37^2	—	13	263	7	229	—

β	961	964	967	970	973	976	979	982	985	988
51	11	—	31	37 p	67	—	7^2	—	139	41
57	—	—	—	71	13	7^2	23	—	67	11^2 i
61	13^2	—	7 k	31^2	11 r	61	—	97	—	7 l
63	23 n	19	—	29	7^2	127	163	11	—	109
67	—	7	11 i	113	—	101	—	13	7	—
69	17	—	—	7^3	—	11 g	313	—	241	—
73	7 f	13 o	29 q	—	—	—	—	7 B	—	—
79	—	—	—	193	—	19 r	7	23	13	11 z
81	—	7^2 f	17	—	—	23 m	13	29	7	61
87	7^2 g	—	—	17	—	—	—	7 i	311	—
91	43	47	151	79	7	11 y	29 m	227	19	13
93	29 m	—	43	151	17^2	211	7	13	11	—
97	19 t	—	—	7 fg	—	151	43^2	—	—	—
99	—	13^2	—	89	173	7 b	11 s	—	43	—

α	990	993	996	999	1002	1005	1008	1011	1014	1017
1	7	199	103	—	97	—	—	7fg	31	—
7	181	13	—	—	—	11	7	—	23	19r
11	11	47	—	7^{2}	23	—	—	—	—	17m
13	—	19	23t	11m	—	7y	73	—	13l	37
17	—	—	$7^{2}i$	41	13^{2}	—	181	—	37	7f
19	83	11	13x	163	7C	—	41	—	—	—
23	—	7^{2}	—	—	31r	—	—	11l	7	—
29	$7^{2}p$	71	67	—	73	11gi	—	7	—	23
31	167	17	7p	13	113	229	59	23	11	7
37	97	7k	17	37^{2}	—	—	11z	19	7p	—
41	—	11^{2}	37	139	59	7r	13	—	19^{2}	—
43	7	41	—	17	11g	29	31	7	61	71
47	13i	—	251	89	7	—	—	41	229	—
49	37	—	11	127	17	—	7	—	—	—
53	—	73	227	7E	29	193	—	13m	11k	97
59	17	13	7k	19	107	—	11r	—	71	7
61	23s	67	—	—	7	227	17^{2}	—	241	$11^{2}l$
67	157	—	—	7	—	19u	13	11b	—	149
71	7	—	11gh	—	—	163	19	7A	29	—
73	13	43	7l	257	197	11o	149	—	17q	$7^{2}m$
77	11	—	263	17	149	43	7	23r	—	13
79	—	7	—	11t	—	23	281	13p	$7^{2}i$	17
83	—	23l	83	13	17^{2}	7	79	—	—	11i
89	—	19	—	—	7	17t	233	11	—	—
91	197	—	131	—	—	—	$7^{2}l$	47	13n	137
97	41	—	13	19^{2}	—	7	163	—	11	—

β	991	994	997	1000	1003	1006	1009	1012	1015	1018
1	113	—	7	11	19	29	23o	17	—	7
3	—	107	179	—	$7^{2}k$	37	11	—	—	13o
7	23m	7f	—	97	37	13v	—	—	7b	—
9	—	—	—	$7^{2}g$	11^{2}	—	19q	—	83	61
13	7	89	—	103	—	—	—	7i	—	17r
19	—	37	—	—	43	239	7g	127	11^{2}	29
21	11	7^{2}	—	29	13	—	43	—	7	19k
27	$7^{3}b$	19	31	23	41	47	—	7	—	11
31	—	—	19l	—	7f	103	—	13^{2}	—	79
33	—	17	—	167	—	13	7	11	—	—
37	—	13	11	7m	269	157	—	67	—	—
39	—	—	17	71	19	7f	193	29	59	—
43	11	277	7	—	—	19	—	137	13w	7
49	—	7	13	—	23	—	29s	103	7z	11q

γ	992	995	998	1001	1004	1007	1010	1013	1016	1019
3	13^2	19	11p	—	—	—	7q	17s	—	181
9	11l	151	—	—	31o	7	—	13	17p	101
11	7	191	151	11i	—	13t	83	7o	—	223
17	47	11y	—	53	—	23l	17	71	307	—
21	313	23	173	7	137	47	—	11t	13	—
23	—	—	—	59	233	7	13i	—	151	227
27	67	—	7g	223	29	11	—	19	—	7
29	13b	—	—	—	7	263	31	107	11	—
33	—	7s	—	11	67	—	71	—	7	13
39	7	11	—	13	47	131	23^2	7m	37o	—
41	—	13^2i	7b	239	11k	—	79	—	—	7
47	61	7	11l	17p	—	—	37	—	7g	97
51	—	—	31	—	13	7n	—	43	11	269
53	7f	113	13	—	17i	53	139	7	—	43
57	—	29	61	47	7F	19	11	79	59	—
59	—	—	—	37	—	17	7	—	277	11gk
63	17	—	37	7o	11	13k	—	—	—	—
69	53	17	7f	—	—	—	211	167	19	7^2
71	37	—	—	109	7m	11	53	17u	293	107
77	—	—	—	7f	13s	179	61	—	17	—
81	7g	—	—	17v	89	31	—	7^2	—	11w
83	101	11^2	7i	—	—	97	271	—	23	7b
87	43	53	59	19	17k	—	7^2	11g	61	—
89	—	7o	23p	—	317	13	—	53	7w	79
93	31	13q	191	—	—	7^2f^2	43	41	—	29
99	109	137	283	11	7^3	—	17i	—	13	—

β	991	994	997	1000	1003	1006	1009	1012	1015	1018
51	13l	11	23	7	17	251	157	19w	173	179
57	229	271	7	—	—	17m	—	13	41	7
61	17i	79	—	13p	—	11	7	109	—	37
63	53	7g	67	47	—	43	17	131	7f	—
67	131	17	—	11^2	167	7w	31	—	47	23p
69	7m	—	19s	—	29	—	11u	7bk	13^2	—
73	—	11	17	19k	7g	—	37	—	—	—
79	41^2	31	113	$7l^2$	—	83	241	—	157	—
81	—	53	11q	41	37	7i	—	—	—	13b
87	11v	—	—	13	7	107	—	—	29m	137
91	—	7t	73	101	—	17	11	199	7k	—
93	281	37	—	7x	—	—	23	—	19	11s
97	7n	—	23	199	11	101	13b	7l	283	19m
99	19k	29q	7r	31	13	—	—	11	—	7

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1	3	5	7	11	13	17	19	23
2	6	10	14	22	26	34	38	46
3	9	15	21	33	39	51	57	69
4	12	20	28	44	52	68	76	92
5	15	25	35	55	65	85	95	115
6	18	30	42	66	78	102	114	138
7	21	35	49	77	91	119	133	161
8	24	40	56	88	104	136	152	184
9	27	45	63	99	117	153	171	207
10	30	50	70	110	130	170	190	230

1	61	67	71	73	79	83	89	97
2	122	134	142	146	158	166	178	194
3	183	201	213	219	237	249	267	291
4	244	268	284	292	316	332	356	388
5	305	335	355	365	395	415	445	485
6	366	402	426	438	474	498	534	582
7	427	469	497	511	553	581	623	679
8	488	536	568	584	632	664	712	776
9	549	603	639	657	711	747	801	873
10	610	670	710	730	790	830	890	970

1	139	149	151	157	163	167	173	179
2	278	298	302	314	326	334	346	358
3	417	447	453	471	489	501	519	537
4	556	596	604	628	652	668	692	716
5	695	745	755	785	815	835	865	895
6	834	894	906	942	978	1002	1038	1074
7	973	1043	1057	1099	1141	1169	1211	1253
8	1112	1192	1208	1256	1304	1336	1384	1432
9	1251	1341	1359	1413	1467	1503	1557	1611
10	1390	1490	1510	1570	1630	1670	1730	1790

1	229	233	239	241	251	257	263	269
2	458	466	478	482	502	514	526	538
3	687	699	717	723	753	771	789	807
4	916	932	956	964	1004	1028	1052	1076
5	1145	1165	1195	1205	1255	1285	1315	1345
6	1374	1398	1434	1446	1506	1542	1578	1614
7	1603	1631	1673	1687	1757	1799	1841	1883
8	1832	1864	1912	1928	2008	2056	2104	2152
9	2061	2097	2151	2169	2259	2313	2367	2421
10	2290	2330	2390	2410	2510	2570	2630	2690

1	29	31	37	41	43	47	53	59
2	58	62	74	82	86	94	106	118
3	87	93	111	123	129	141	159	177
4	116	124	148	164	172	188	212	236
5	145	155	185	205	215	235	265	295
6	174	186	222	246	258	282	318	354
7	203	217	259	287	301	329	371	413
8	232	248	296	328	344	376	424	472
9	261	279	333	369	387	423	477	531
10	290	310	370	410	430	470	530	590

1	101	103	107	109	113	127	131	137
2	202	206	214	218	226	254	262	274
3	303	309	321	327	339	381	393	411
4	404	412	428	436	452	508	524	548
5	505	515	535	545	565	635	655	685
6	606	618	642	654	678	762	786	822
7	707	721	749	763	791	889	917	959
8	808	824	856	872	904	1016	1048	1096
9	909	927	963	981	1017	1143	1179	1233
10	1010	1030	1070	1090	1130	1270	1310	1370

1	181	191	193	197	199	211	223	227
2	362	382	386	394	398	422	446	454
3	543	573	579	591	597	633	669	681
4	724	764	772	788	796	844	892	908
5	905	955	965	985	995	1055	1115	1135
6	1086	1146	1158	1182	1194	1266	1338	1362
7	1267	1337	1351	1379	1393	1477	1561	1589
8	1448	1528	1544	1576	1592	1688	1784	1816
9	1629	1719	1737	1773	1791	1899	2007	2043
10	1810	1910	1930	1970	1990	2110	2230	2270

1	271	277	281	283	293	307	311	313
2	542	554	562	566	586	614	622	626
3	813	831	843	849	879	921	933	939
4	1084	1108	1124	1132	1172	1228	1244	1252
5	1355	1385	1405	1415	1465	1535	1555	1565
6	1626	1662	1686	1698	1758	1842	1866	1878
7	1897	1939	1967	1981	2051	2149	2177	2191
8	2168	2216	2248	2264	2344	2456	2488	2504
9	2439	2493	2529	2547	2637	2763	2799	2817
10	2710	2770	2810	3830	2930	3070	3110	3130

TAB. III.

NUMERI EX PRIMIS FACTI.

7. 11. 13. 17. 19. 23. 29 = 215656441.
31. 37. 41. 43. 47 = 95041567.
53. 59. 61. 67. 71 = 907383479.
73. 79. 83. 89. 97 = 4132280413.
101. 103. 107. 109. 113 = 13710311357.
127. 131. 137. 139. 149 = 47205940259.
151. 157. 163. 167. 173 = 111641786731.

TAB. IV.

TERMINATIONES QUADRATORUM IMPARIUM.

001	121	241	301	481	601	721	841	961
009	129	249	369	489	609	729	849	969
025	—	—	—	—	625	—	—	—
041	161	281	401	521	641	761	881	
049	169	289	409	529	649	769	889	
081	201	321	441	561	681	801	921	
089	209	329	449	569	689	809	929	
—	225	—	—	—	—	—	—	

TAB. V.

DIFFERENTIAE DUORUM QUADRATORUM.

$$A = 12\,m - 1 = 36a^2 - (2b+1)^2$$

$$A = 12\,m + 1 = (2b+1)^2 - 36a^2$$

$$A = 12\,m - 5 = 4a^2 - 9(2b+1)^2$$

$$A = 12\,m + 5 = 9(2b+1)^2 - 4a^2$$

TAB. VI. NUMERI PRIMI.

1	191	443	727	1021	1319	1627
2	93	49	33	31	21	37
3	97	57	39	33	27	57
5	99	61	43	39	61	63
7	211	63	51	49	67	67
11	23	67	57	51	73	69
13	27	79	61	61	81	93
17	29	87	69	63	99	97
19	33	91	73	69	1409	99
23	39	99	87	87	23	1709
29	41	503	97	91	27	21
31	51	9	809	93	29	23
37	57	21	11	97	33	33
41	63	23	21	1103	39	41
43	69	41	23	09	47	47
47	71	47	27	17	51	53
53	77	57	29	23	53	59
59	81	63	39	29	59	77
61	83	69	53	51	71	83
67	93	71	57	53	81	87
71	307	77	59	63	83	89
73	11	87	63	71	87	1801
79	13	93	77	81	89	11
83	17	99	81	87	93	23
89	31	601	83	93	99	31
97	37	7	87	1201	1511	47
101	47	13	907	13	23	61
3	49	17	11	17	31	67
7	53	19	19	23	43	71
9	59	31	29	29	49	73
13	67	41	37	31	53	77
27	73	43	41	37	59	79
31	79	47	47	49	67	89
37	83	53	53	59	71	1901
39	89	59	67	77	79	07
49	97	61	71	79	83	13
51	401	73	77	83	97	31
57	9	77	83	89	1601	33
63	19	83	91	91	07	49
67	21	91	97	97	09	51
73	31	701	1009	1301	13	73
79	33	9	13	03	19	79
81	39	19	19	07	21	87

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11	03	21	31	14303	14713	15101
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19	09	51	59	23	23	21
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53	49	77	83	69	47	49
59	63	87	13901	87	53	61
71	93	99	03	89	59	73
89	99	13513	07	14401	67	87
97	13103	23	13	07	71	93
12703	09	37	21	11	79	99
13	21	53	31	19	83	15217
21	27	67	33	23	97	27
39	47	77	63	31	14813	33
43	51	91	67	37	21	41
57	59	97	97	47	27	59
63	63	13613	99	49	31	63
81	71	19	14009	61	43	69
91	77	27	11	79	51	71
99	83	33	29	89	67	77
12809	87	49	33	14503	69	87
21	13217	69	51	19	79	89
23	19	79	57	33	87	99
29	29	81	71	37	91	15307
41	41	87	81	43	97	13
53	49	91	83	49	14923	19
89	59	93	87	51	29	29
93	67	97	14107	57	39	31
99	91	13709	43	61	47	49
12907	97	11	49	63	51	59
11	13309	21	53	91	57	61
17	13	23	59	93	69	73
19	27	29	73	14621	83	77
23	31	51	77	27	15013	83
41	37	57	97	29	17	91
53	39	59	14207	33	31	15401
59	67	63	21	39	53	13
67	81	81	43	53	61	27
73	97	89	49	57	73	39
79	99	99	51	69	77	43
83	13411	13807	81	83	83	51

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TAB. III.

NUMERI EX PRIMIS FACTI.

7. 11. 13. 17. 19. 23. 29 = 215656441.

31. 37. 41. 43. 47 = 95041567.

53. 59. 61. 67. 71 = 907383479.

73. 79. 83. 89. 97 = 4132280413.

101. 103. 107. 109. 113 = 13710311357.

127. 131. 137. 139. 149 = 47205940259.

151. 157. 163. 167. 173 = 111641786731.

TAB. IV.

TERMINATIONES QUADRATORUM IMPARIUM.

001	121	241	301	481	601	721	841	961
009	129	249	369	489	609	729	849	969
025	—	—	—	—	625	—	—	—
041	161	281	401	521	641	761	881	
049	169	289	409	529	649	769	889	
081	201	321	441	561	681	801	921	
089	209	329	449	569	689	809	929	
—	225	—	—	—	—	—	—	

TAB. V.

DIFFERENTIAE DUORUM QUADRATORUM.

$$A = 12\,m - 1 = 36a^2 - (2b+1)^2$$

$$A = 12\,m + 1 = (2b+1)^2 - 36a^2$$

$$A = 12\,m - 5 = 4a^2 - 9(2b+1)^2$$

$$A = 12\,m + 5 = 9(2b+1)^2 - 4a^2$$

TAB. VI. NUMERI PRIMI.

1	191	443	727	1021	1319	1627
2	93	49	33	31	21	37
3	97	57	39	33	27	57
5	99	61	43	39	61	63
7	211	63	51	49	67	67
11	23	67	57	51	73	69
13	27	79	61	61	81	93
17	29	87	69	63	99	97
19	33	91	73	69	1409	99
23	39	99	87	87	23	1709
29	41	503	97	91	27	21
31	51	9	809	93	29	23
37	57	21	11	97	33	33
41	63	23	21	1103	39	41
43	69	41	23	09	47	47
47	71	47	27	17	51	53
53	77	57	29	23	53	59
59	81	63	39	29	59	77
61	83	69	53	51	71	83
67	93	71	57	53	81	87
71	307	77	59	63	83	89
73	11	87	63	71	87	1801
79	13	93	77	81	89	11
83	17	99	81	87	93	23
89	31	601	83	93	99	31
97	37	7	87	1201	1511	47
101	47	13	907	13	23	61
3	49	17	11	17	31	67
7	53	19	19	23	43	71
9	59	31	29	29	49	73
13	67	41	37	31	53	77
27	73	43	41	37	59	79
31	79	47	47	49	67	89
37	83	53	53	59	71	1901
39	89	59	67	77	79	07
49	97	61	71	79	83	13
51	401	73	77	83	97	31
57	9	77	83	89	1601	33
63	19	83	91	91	07	49
67	21	91	97	97	09	51
73	31	701	1009	1301	13	73
79	33	9	13	03	19	79
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87	77	10601	11003	37	63	53
91	81	07	27	43	67	63
9803	93	13	47	47	87	69
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29	43	39	69	83	09	89
33	47	51	71	89	23	12301
39	53	57	83	91	27	23
51	59	63	87	97	33	29
57	67	67	93	11503	39	43
59	71	87	11113	19	41	47
71	73	91	17	27	53	73
83	89	10709	19	49	59	77
87	10301	11	31	51	69	79
9901	03	23	49	79	71	91
07	13	29	59	87	81	12401
23	21	33	61	93	87	09
29	31	39	71	97	12007	13
31	33	53	73	11617	11	21
41	37	71	77	21	37	33
49	43	81	97	33	41	37
67	57	89	11213	57	43	51
73	69	99	39	77	49	57
10007	91	10831	43	81	71	73
09	99	37	51	89	73	79
37	10427	47	57	99	97	87
39	29	53	61	11701	12101	91
61	33	59	73	17	07	97
67	53	61	79	19	09	12503
69	57	67	87	31	13	11
79	59	83	99	43	19	17
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99	87	10903	21	83	57	41
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97	13103	23	13	07	71	93
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13	21	53	31	19	83	15217
21	27	67	33	23	97	27
39	47	77	63	31	14813	33
43	51	91	67	37	21	41
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63	63	13613	99	49	31	63
81	71	19	14009	61	43	69
91	77	27	11	79	51	71
99	83	33	29	89	67	77
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21	13217	69	51	19	79	89
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12907	97	11	49	63	51	59
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71	63	87	73	97	79201	87
77	67	89	79	78707	29	91
81	69	99	91	13	31	93
76801	79	77711	93	21	41	97
19	91	13	78203	37	59	99
29	77317	19	29	79	73	79757
31	23	23	33	81	79	69
37	39	31	41	87	83	77
47	47	43	59	91	79301	79801
71	51	47	77	97	09	11
73	59	61	83	78803	19	13
83	69	73	78301	09	33	17
76907	77	83	07	23	37	23
13	83	97	11	39	49	29
19	77417	77801	17	53	57	41
43	19	13	41	57	67	43
49	31	39	47	77	79	47
61	47	49	67	87	93	61
63	71	63	78401	89	97	67
91	77	67	27	93	99	73

79889	80347	80819	81283	81761	82219	82721
79901	63	31	93	69	23	23
03	69	33	99	73	31	27
07	87	49	81307	99	37	29
39	80407	63	31	81817	41	57
43	29	97	43	39	61	59
67	47	80909	49	47	67	63
73	49	11	53	53	79	81
79	71	17	59	69	82301	87
87	73	23	71	83	07	93
97	89	29	73	99	39	99
99	91	33	81401	81901	49	82811
80021	80513	53	09	19	51	13
39	27	63	21	29	61	37
51	37	89	39	31	73	47
71	57	81001	57	37	87	83
77	67	13	63	43	93	89
80107	99	17	81509	53	82421	91
11	80603	19	17	67	57	82903
41	11	23	27	71	63	13
47	21	31	33	73	69	39
49	27	41	47	82003	71	63
53	29	43	51	07	83	81
67	51	47	53	09	87	97
73	57	49	59	13	93	83003
77	69	71	63	21	99	09
91	71	77	69	31	82507	23
80207	77	83	81611	37	29	47
07	81	97	19	39	31	59
09	83	81101	29	51	49	63
21	87	19	37	67	59	71
31	80701	31	47	73	61	77
33	13	57	49	82129	67	89
39	37	63	67	39	71	93
51	47	73	71	41	91	83101
63	49	81	77	53	82601	17
73	61	97	89	63	09	37
79	77	99	81701	71	13	77
87	79	81203	03	83	19	83203
80309	83	23	07	89	33	07
17	89	33	27	93	51	19
29	80803	39	37	82207	57	21
41	09	81	49	17	99	27

83231	83717	84229	84713	85223	85703	86243
33	19	39	19	29	11	49
43	37	47	31	37	17	57
57	61	63	37	43	33	63
67	73	99	51	47	51	69
69	77	84307	61	59	81	87
73	91	13	87	97	93	91
99	83813	17	93	85303	85817	93
83311	33	19	84809	13	19	97
39	43	47	11	31	29	86311
41	57	49	27	33	31	23
57	69	77	57	61	37	41
83	73	89	59	63	43	51
89	91	91	69	69	47	53
99	83903	84401	71	81	53	57
83401	11	07	84913	85411	89	69
07	21	21	19	27	85903	71
17	33	31	47	29	09	81
23	39	37	61	39	31	89
31	69	43	67	47	33	99
37	83	49	77	51	91	86413
43	87	57	79	53	99	23
49	84011	63	91	69	86011	41
59	17	67	85009	87	17	53
71	47	81	21	85513	27	61
77	53	99	27	17	29	67
97	59	84503	37	23	69	77
83537	61	09	49	31	77	91
57	67	21	61	49	83	86501
61	89	23	81	71	86111	09
63	84121	33	87	77	13	31
79	27	51	91	97	17	33
91	31	59	93	85601	31	39
97	37	89	85103	07	37	61
83609	43	84629	09	19	43	73
17	63	31	21	21	61	79
21	79	49	33	27	71	87
39	81	53	47	39	79	99
41	91	59	59	43	83	86627
53	99	73	93	61	97	29
63	84211	91	99	67	86201	77
89	21	97	85201	69	09	89
83701	23	84701	13	91	39	93

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TAB. VI. NUMERI

96953	97463	97973	98507	98981	99487	99961
59	99	87	19	93	97	71
73	97501	98009	33	99	99523	89
79	11	11	43	99013	27	91
89	23	17	61	17	29	100003
97	47	41	63	23	51	19
97001	49	47	73	41	59	43
03	53	57	97	53	63	49
07	61	81	68621	79	71	57
21	71	98101	27	83	77	69
39	77	23	39	89	81	100103
73	79	29	41	99103	99607	09
81	83	43	63	09	11	29
97103	97607	79	69	19	23	51
17	09	98207	89	31	43	53
27	13	13	98711	33	61	69
51	49	21	13	37	67	83
57	51	27	17	39	79	89
59	73	51	29	49	89	93
69	87	57	31	73	99707	100207
71	97711	69	37	81	09	13
77	29	97	73	91	13	37
87	71	99	79	99223	19	67
97213	77	98317	98801	33	21	71
31	87	21	07	41	33	79
41	89	23	09	51	61	91
59	97813	27	37	57	67	97
83	29	47	49	59	87	100313
97301	41	69	67	77	93	33
03	43	77	69	89	99809	43
27	47	87	73	99317	17	57
67	49	89	87	47	23	61
69	59	98407	93	49	29	63
73	61	11	97	67	33	79
79	71	19	99	71	39	91
81	79	29	98909	77	59	93
87	83	43	11	91	71	109403
97	97919	53	27	97	77	11
97423	27	59	29	99401	81	17
29	31	67	39	09	99901	47
41	43	73	47	31	07	59
53	61	79	53	39	23	69
59	67	91	63	69	29	83

100493	100703	100957	101161	101363	101561	101771
100501	33	81	73	77	73	89
11	41	87	83	83	81	97
17	47	99	97	99	99	101807
19	69	101009	101203	101411	101603	33
23	87	21	07	19	11	37
37	99	27	09	29	27	39
47	100801	51	21	49	41	63
49	11	63	67	67	53	69
59	23	81	73	77	63	73
91	29	89	79	83	81	79
100609	47	101107	81	89	93	91
13	53	11	87	101501	101701	101917
21	100907	13	93	03	19	21
49	13	17	101323	13	23	29
69	27	19	33	27	37	39
73	31	41	41	31	41	57
93	37	49	47	33	47	63
99	43	59	59	37	49	77

Non obruemus numeris primis indagatores diviſibilium , ſed acquieſcentes termino Auctoris breviter inquiremus hoc ſpatiolo rationem inter copiam diviſibilium et indiviſibilium. Quippe repertum eſt , intra terminos $2^{\text{dæ}}$ millionis 71 fere reſpondere cuivis 1000, adeoque 14. fere partem numerorum , excluſis vero per 2 , 3 , 5 diviſibilibus (inter 11 fere 3 occurrere primos) quartam prope partem.

Hæc ratio in ſequentibus millionibus parum differt , quia intra 1409 et 3163 proxime $\sqrt{10^{\text{m}}}$. nonniſi 224 num. pr. occurrunt 25200 nova producta factoribus infra 1409 non affecta proferentes ; inde patet, primorum multitudinem vix ſenſibiliter decreſcere in millionibus ſemper altioribus. Intra 10- et 100^{m} 306153 nova producta intrant , minuentes primos intra 1000 de 71 ad 68 ; intra 100^{m} et 200^{m} 94830 nova producta (neque ideo 1 pro 1000) intrant ; adeoque ratio indiviſibilium et diviſibilium ſemper pendebit intra 1 : 14 et 1 : 15.

Juverit hic adducere conjecturam Cl. *Hindenburg* p. 15. Operis alibi citati , a me jam præmeditatam , quam indemonſtratam ſuppreſſit : Inter milliones remotiſſimas occurrere debere epochas millionum , quarum numeri primi auctiores ſint illis primarum millionum : Quod ſupplere viſum eſt ita : Creſcentibus ſemper millionibus , multiplis tamen novis inſenſibiliter auctis, devenietur tandem ad combinationes factorum primorum ordinum , ubi limites antecedentes (qui concipi poſſunt, numeris infra 1 negative continuatis) et conſequentes , quibus ab 1 aſcendimus , proxime accedunt , duplaque quodammodo inter diviſibiles interſtitia offerent ; idque per vices infinite variantes , productis novis infinite quodammodo divergentibus.

Tantum abeſt , ut indiviſibilium copia novorum productorum multitudine exhauriatur. **F.**

TAB. VII.

DIGNITATES BINARII.

1	2	11	2048	21	2097152	31	2147483648
2	4	12	4096	22	4194304	32	4294967296
3	8	13	8192	23	8388608	33	8589934592
4	16	14	16384	24	16777216	34	17179869184
5	32	15	32768	25	33554432	35	34359738368
6	64	16	65536	26	67108864	36	68719476736
7	128	17	131072	27	134217728	37	137438953472
8	256	18	262144	28	268435456	38	274877906944
9	512	19	524288	29	536870912	39	549755813888
10	1024	29	1048576	30	1073741824	40	1099511627776

41	2199023255552	51	2251799813685248
42	4398046511104	52	4503599627370496
43	8796093022208	53	9007199254740992
44	17592186044416	54	18014398509481984
45	35184372088832	55	36028797018963968
46	70368744177664	56	72057594037927936
47	140737488355328	57	144115188075855872
48	281474976710656	58	288230376151711744
49	562949953421312	59	576460752303423488
50	1125899906842624	60	1152921504606846976

61	2305843009213693952
62	4611686018427387904
63	9223372036854775808
64	18446744073709551616
65	36893488147419103232
66	73786976294838206464
67	147573952589676412928
68	295147905179352825856
69	590295810358705651712
70	1180591620717411303424

TAB. VIII.

DIGNITATES TERNARII.

1	3	11	177147	21	10460353203
2	9	12	531441	22	31381059609
3	27	13	1594323	23	94143178827
4	81	14	4782969	24	282429536481
5	243	15	14348907	25	847288609443
6	729	16	43046721	26	2541865828329
7	2187	17	129140163	27	7625597484987
8	6561	18	387420489	28	22876792454961
9	19683	19	1162261467	29	68630377364883
10	59049	20	3486784401	30	205891132094649

31	617673396283947
32	1853020188851841
33	5559060566555523
34	16677181699666569
35	50031545098999707
36	150094635296999121
37	450283905890997363
38	1350851717672992089
39	4052555153018976267
40	12157665459056928801
41	36472996377170786403
42	109418989131512359209
43	328256967394537077627
44	984770902183611232881
45	2954312706550833698643
46	8862938119652501095929
47	26588814358957503287787
48	79766443076872509863361
49	239299329230617529590083
50	717897987691852588770249

TAB. IX.

DIGNITATES QUINARII.

1	5	11	48828125	21	476837158203125
2	25	12	244140625	22	2384185791015625
3	125	13	1220703125	23	11920928955078125
4	625	14	6103515625	24	59604644775390625
5	3125	15	30517578125	25	298023223876953125
6	15625	16	152587890625	26	1490116119384765625
7	78125	17	762939453125	27	7450580596923828125
8	390625	18	3814697265625	28	37252902984619140625
9	1953125	19	19073486328125	29	186264514923095703125
10	9765625	20	95367431640625	30	931322574615478515625

31	4656612873077392578125
32	23283064365386962890625
33	116415321826934814453125
34	582076609134674072265625
45	2910383045673370361328125
36	14551915228366851806640625
37	72759576141834259033203125
38	363797880709171295166015625
39	1818989403545856475830078125
40	9094947017729282379150390625
41	45474735088646411895751953125
42	227373675443232059478759765625
43	1136868377216160297393798828125
44	5684341886080801486968994140625
45	28421709430404007434844970703125
46	142108547152020037174224853515625
47	710542735760100185871124267578125
48	3552713678800500929355621337890625
49	17763568394002504646778106689453125
50	88817841970012523233890533447265625

TAB. X.

Log. $e = 1.$

$$e^x = 1 + x + \frac{1}{2}x^2 + \frac{1}{2.3}x^3 + \frac{1}{2.3.4}x^4 + \&c.$$

$$e^x = \cfrac{1}{+1+\cfrac{1}{-1:x+\cfrac{1}{-2+\cfrac{1}{+3:x+\cfrac{1}{+2+\cfrac{1}{-5:x+\cfrac{1}{-2+\cfrac{1}{+7:x+\&c.}}}}}}}}$$

$$e^x = \frac{2+x}{2-x} - \frac{1}{12}x^3 - \frac{1}{12}x^4 - \&c.$$

$$e^x = \frac{12+6x+xx}{12-6x+xx} + \frac{1}{720}x^5 + \&c.$$

$$\frac{e^x+1}{1} = \cfrac{1}{1-\cfrac{1}{2:x+\cfrac{1}{0:x+\cfrac{1}{10:x+\cfrac{1}{14:x+\cfrac{1}{18:x+\&c.}}}}}}$$

TAB. XI.

x	e^{-x}	x	e^{-x}
0,1	0,9048375	1	0,3678879
0,2	0,8187308	2	0,1353353
0,3	0,7408182	3	0,0497871
0,4	0,6703201	4	0,0183156
0,5	0,6065307	5	0,0067379
0,6	0,5488116	6	0,0024788
0,7	0,4965053	7	0,0009119
0,8	0,4493290	8	0,0003355
0,9	0,4065696	9	0,0001234
0,0	0,3678879	10	0,0000454

TAB. XII.

$$\text{Log.}(1+x) = x - \frac{1}{2}x^2 + \frac{1}{3}x^3 - \frac{1}{4}x^4 + \frac{1}{5}x^5 - \text{\&c.}$$

$$\text{Log.}(a+x) = la + \frac{x}{a} - \frac{x^2}{2a^2} + \frac{x^3}{3a^3} - \frac{x^4}{4a^4} + \text{\&c.}$$

$$\text{Log.}(1+x) = \cfrac{1}{1:x + \cfrac{1}{2 + \cfrac{1}{3:x + \cfrac{1}{1 + \cfrac{1}{5:x + \cfrac{1}{2:3 + \cfrac{1}{7:x + \cfrac{1}{2:4 + \text{\&c.}}}}}}}}}$$

$$\text{Log.}\left(1+\frac{1}{x}\right) = \cfrac{1}{x + \cfrac{1}{2:1 + \cfrac{1}{3x + \cfrac{1}{2:2 + \cfrac{1}{5x + \cfrac{1}{2:3 + \cfrac{1}{7x + \cfrac{1}{2:4 + \text{\&c.}}}}}}}}}$$

	1	0
x	0	1
2	1	x
$3x$	2	$2x+1$
1	$6x+1$	$6x^2+4x$
$5x$	$6x+3$	$6x^2+6x+1$
2:3	$30x^2+21x+1$	$30x^3+36x^2+9x$
$7x$	$20x^2+20x+\frac{11}{3}$	$20x^3+30x^2+12x+1$
etc.	$140x^3+170x^2+\frac{140}{3}x+1$ &c.	$140x^4+240x^3+120x^2+16x$ &c.

$$\text{Log.}\left(1+\frac{1}{x}\right) < \frac{1}{x} \qquad > \frac{6x+3}{6x^2+6x+1}$$

$$> \frac{2}{2x+1} \qquad < \frac{30x^2+21x+1}{30x^3+36x^2+9x}$$

$$< \frac{6x+1}{6x^2+4x} \qquad \text{\&c.}$$

TAB. XIII.

N.	log. hyperb.	N.	log. hyperb.	N.	log. hyperb.
1	0.0000000	34	3.5263605	67	4.2046926
2	0.6931472	35	3.5553481	68	4.2195077
3	1.0986123	36	3.5835189	69	4.2341065
4	1.3862943	37	3.6109179	70	4.2484952
5	1.6094379	38	3.6375862	71	4.2626799
6	1.7917595	39	3.6635616	72	4.2766661
7	1.9459101	40	3.6888794	73	4.2904594
8	2.0794415	41	3.7135720	74	4.3040651
9	2.1972246	42	3.7376696	75	4.3174881
10	2.3025851	43	3.7612000	76	4.3307333
11	2.3978953	44	3.7841896	77	4.3438054
12	2.4849066	45	3.8066625	78	4.3567088
13	2.5649493	46	3.8286414	79	4.3694478
14	2.6390573	47	3.8501475	80	4.3820266
15	2.7080502	48	3.8712010	81	4.3944491
16	2.7725887	49	3.8918203	82	4.4067191
17	2.8332133	50	3.9120230	83	4.4188406
18	2.8903718	51	3.9318256	84	4.4308168
19	2.9444390	52	3.9512437	85	4.4426512
20	2.9957323	53	3.9702919	86	4.4543473
21	3.0445224	54	3.9889840	87	4.4659081
22	3.0910425	55	4.0073332	88	4.4773368
23	3.1354942	56	4.0253517	89	4.4886364
24	3.1780538	57	4.0430513	90	4.4998097
25	3.2188758	58	4.0604430	91	4.5108595
26	3.2580965	59	4.0775373	92	4.5217886
27	3.2958369	60	4.0943446	93	4.5325995
28	3.3322045	61	4.1108738	94	4.5432946
29	3.3672958	62	4.1271344	95	4.5538769
30	3.4011974	63	4.1431347	96	4.5643482
31	3.4339872	64	4.1588831	97	4.5747110
32	3.4657359	65	4.1743873	98	4.5849675
33	3.4965076	66	4.1896547	99	4.5951199
34	3.5263605	67	4.2046926	100	4.6051702

TAB. XIV.

$$
\begin{array}{lcl}
\log.\ 10 & = & 2{,}3025851 \\
\log.\ 10^2 & = & 4{,}6051702 \\
\log.\ 10^3 & = & 6{,}9077553 \\
\log.\ 10^4 & = & 9{,}2103404 \\
\log.\ 10^5 & = & 11{,}5129255 \\
\log.\ 10^6 & = & 13{,}8155106 \\
\log.\ 10^7 & = & 16{,}1180957 \\
\log.\ 10^8 & = & 18{,}4206807 \\
\log.\ 10^9 & = & 20{,}7232658 \\
\log.\ 10^{10} & = & 23{,}0258509.
\end{array}
$$

$$\log.\ (a+x) = \log.\ a + \frac{x}{a+\frac{1}{2}x} * + \frac{x^3}{12a^3} + \&c.$$

$$= \mathrm{A}$$

$$\mathrm{A} - \log.\ a = b = \frac{x}{a+\frac{1}{2}x}$$

$$x = \frac{ab}{1-\frac{1}{2}b}$$

$$\log.\ 1{,}8768 = \log.\ 1{,}87 + \frac{0{,}0068}{1{,}8734} = 0{,}6295681.$$

$$\log.\ 187{,}68 = \log.\ 10^2 + \log.\ 1{,}8768 = 5{,}2347383.$$

TAB. XV.

N.	Logarith.	N.	Logarith.	N.	Logarith.
1.01	0099503	1.34	2926696	1.67	5128236
1 02	0198026	1.35	3001045	1.68	5187937
1.03	0295588	1.36	3074846	1.69	5247285
1.04	0392207	1.37	3148107	1.70	5306282
1.05	0487902	1.38	3220834	1.71	5364933
1.06	0582689	1.39	3293037	1.72	5423242
1.07	0676586	1.40	3364722	1.73	5481214
1.08	0769610	1.41	3435897	1.74	5538851
1.09	0861777	1.42	3506568	1.75	5596157
1.10	0953102	1.43	3576744	1.76	5653138
1.11	1043600	1.44	3646431	1.77	5709795
1.12	1133287	1.45	3715635	1.78	5766133
1.13	1222176	1.46	3784364	1.79	5822156
1.14	1310283	1.47	3852624	1.80	5877866
1.15	1397619	1.48	3920420	1.81	5933268
1.16	1484200	1.49	3987761	1.82	5988365
1.17	1570037	1.50	4054651	1.83	6043159
1.18	1655144	1.51	4121096	1.84	6097655
1.19	1739533	1.52	4187103	1.85	6151856
1.20	1823215	1.53	4252677	1.86	6205764
1.21	1906203	1.54	4317824	1.87	6259384
1.22	1988508	1.55	4382549	1.88	6312717
1.23	2070141	1.56	4446858	1.89	6365768
1.24	2151113	1.57	4510756	1.90	6418538
1.25	2231435	1.58	4574248	1.91	6471032
1.26	2311117	1.59	4637340	1.92	6523251
1.27	2390169	1.60	4700036	1.93	6575200
1.28	2468600	1.61	4762341	1.94	6626879
1.29	2546422	1.62	4824261	1.95	6678293
1.30	2623642	1.63	4885800	1 96	6729444
1.31	2700271	1.64	4946962	1.97	6780335
1.32	2776317	1.65	5007752	1.98	6830968
1.33	2851789	1.66	5068175	1.99	6881346
1.34	2926696	1.67	5128236	2.00	6931472

TAB. XV.

N.	Logarith.	N.	Logarith	N.	Logarith.
2.01	6981347	2.34	8501509	2.67	9820784
2.02	7030974	2.35	8544153	2.68	9858167
2.03	7080357	2.36	8586616	2.69	9895411
2.04	7129497	2.37	8628899	2.70	9932517
2.05	7178397	2.38	8671004	2.71	9969486
2.06	7227059	2.39	8712933	2.72	1.0006318
2.07	7275485	2.40	8754687	2.73	1.0043015
2.08	7323678	2.41	8796267	2.74	1.0079579
2.09	7371640	2.42	8837675	2.75	1.0116008
2.10	7419373	2.43	8878912	2.76	1.0152306
2.11	7466879	2.44	8919980	2.77	1.0188473
2.12	7514160	2.45	8960880	2.78	1.0224509
2.13	7561219	2.46	9001613	2.79	1.0260415
2.14	7608058	2.47	9042181	2.80	1.0296194
2.15	7654678	2.48	9082585	2.81	1.0331844
2.16	7701082	2.49	9122826	2.82	1.0367368
2.17	7747271	2.50	9162907	2.83	1.0402766
2.18	7793248	2.51	9202827	2.84	1.0438040
2.19	7839015	2.52	9242589	2.85	1.0473189
2.20	7884573	2.53	9282193	2.86	1.0508216
2.21	7929925	2.54	9321640	2.87	1.0543120
2.22	7975071	2.55	9360933	2.88	1.0577902
2.23	8020015	2.56	9400072	2.89	1.0612564
2.24	8064758	2.57	9439058	2.90	1.0647107
2.25	8109302	2.58	9477893	2.91	1.0681530
2.26	8153648	2.59	9516578	2.92	1.0715836
2.27	8197798	2.60	9555114	2.93	1.0750024
2.28	8241754	2.61	9593502	2.94	1.0784095
2.29	8285518	2.62	9631743	2.95	1.0818051
2.30	8329091	2.63	9669838	2.96	1.0851892
2.31	8372475	2.64	9707789	2.97	1.0885619
2.32	8415671	2.65	9745596	2.98	1.0919233
2.33	8458682	2.66	9783261	2.99	1.0952733
2.34	8501509	2.67	9820784	3.00	1.0986123

TAB. XV.

N.	Logarith.	N.	Logarith.	N.	Logarith.
3.01	1.1019400	3.34	1.2059707	3.67	1.3001916
3.02	1.1052568	3.35	1.2089603	3.68	1.3029127
3.03	1.1085626	3.36	1.2119409	3.69	1.3056264
3.04	1.1118575	3.37	1.2149127	3.70	1.3083328
3.05	1.1151415	3.38	1.2178757	3.71	1.3110318
3.06	1.1184149	3.39	1.2208299	3.72	1.3137236
3.07	1.1216775	3.40	1.2237754	3.73	1.3164082
3.08	1.1249295	3.41	1.2267122	3.74	1.3190856
3.09	1.1281710	3.42	1.2296405	3.75	1.3217558
3.10	1.1314021	3.43	1.2325605	3.76	1.3244189
3.11	1.1346227	3.44	1.2354714	3.77	1.3270749
3.12	1.1378330	3.45	1.2383742	3.78	1.3297240
3.13	1.1410330	3.46	1.2412685	3.79	1.3323660
3.14	1.1442227	3.47	1.2441545	3.80	1.3350010
3.15	1.1474024	3.48	1.2470322	3.81	1.3376291
3.16	1.1505720	3.49	1.2499017	3.82	1.3402504
3.17	1.1537315	3.50	1.2527629	3.83	1.3428648
3.18	1.1568811	3.51	1.2556160	3.84	1.3454723
3.19	1.1600209	3.52	1.2584609	3.85	1.3480731
3.20	1.1631508	3.53	1.2612978	3.86	1.3506671
3.21	1.1662709	3.54	1.2641266	3.87	1.3532544
3.22	1.1693813	3.55	1.2669475	3.88	1.3558351
3.23	1.1724821	3.56	1.2697605	3.89	1.3584091
3.24	1.1755733	3.57	1.2725655	3.90	1.3609765
3.25	1.1786549	3.58	1.2753627	3.91	1.3635373
3.26	1.1817271	3.59	1.2781521	3.92	1.3660916
3.27	1.1847899	3.60	1.2809338	3.93	1.3686394
3.28	1.1878434	3.61	1.2837077	3.94	1.3711807
3.29	1.1908875	3.62	1.2864740	3.95	1.3737156
3.30	1.1939224	3.63	1.2892326	3.96	1.3762440
3.31	1.1969481	3.64	1.2919836	3.97	1.3787661
3.32	1.1999647	3.65	1.2947271	3.98	1.3812818
3.33	1.2029722	3.66	1.2974631	3.99	1.3837912
3.34	1.2059707	3.67	1.3001916	4.00	1.3862943

TAB. XV.

N.	Logarith.	N.	Logarith.	N.	Logarith.
4.01	1.3887912	4.34	1.4678743	4.67	1.5411590
4.02	1.3912818	4.35	1.4701758	4.68	1.5432981
4.03	1.3937563	4.36	1.4724720	4.69	1.5454325
4.04	1.3962446	4.37	1.4747630	4.70	1.5475625
4.05	1.3987168	4.38	1.4770487	4.71	1.5496879
4.06	1.4011829	4.39	1.4793292	4.72	1.5518087
4.07	1.4036429	4.40	1.4816045	4.73	1.5539252
4.08	1.4060969	4.41	1.4838746	4.74	1.5560371
4.09	1.4085449	4.42	1.4861396	4.75	1.5581446
4.10	1.4109869	4.43	1.4883995	4.76	1.5602476
4.11	1.4134230	4.44	1.4906543	4.77	1.5623462
4.12	1.4158531	4.45	1.4929040	4.78	1.5644405
4.13	1.4182774	4.46	1.4951487	4.79	1.5665304
4.14	1.4206957	4.47	1.4973883	4.80	1.5686159
4.15	1.4231083	4.48	1.4996230	4.81	1.5706971
4.16	1.4255150	4.49	1.5018527	4.82	1.5727739
4.17	1.4279160	4.50	1.5040774	4.83	1.5748464
4.18	1.4303112	4.51	1.5062971	4.84	1.5769147
4.19	1.4327007	4.52	1.5085119	4.85	1.5789787
4.20	1.4350845	4.53	1.5107219	4.86	1.5810384
4.21	1.4374626	4.54	1.5129269	4.87	1.5830939
4.22	1.4398351	4.55	1.5151272	4.88	1.5851452
4.23	1.4422020	4.56	1.5173226	4.89	1.5871923
4.24	1.4445632	4.57	1.5195132	4.90	1.5892352
4.25	1.4469189	4.58	1.5216990	4.91	1.5912739
4.26	1.4492691	4.59	1.5238800	4.92	1.5933085
4.27	1.4516138	4.60	1.5260563	4.93	1.5953389
4.28	1.4539530	4.61	1.5282278	4.94	1.5973653
4.29	1.4562867	4.62	1.5303947	4.95	1 5993875
4.30	1.4586149	4.63	1.5325568	4.96	1.6014057
4.31	1.4609379	4.64	1.5347143	4.97	1.6034198
4.32	1.4632553	4.65	1.5368672	4.98	1.6054298
4.33	1.4655675	4.66	1.5390154	4.99	1.6074358
4.34	1.4678743	4.67	1.5411590	5.00	1.6094379

TAB. XV.

N.	Logarith.	N.	Logarith.	N.	Logarith.
5.01	1.6114359	5.34	1.6752256	5.67	1.7351891
5.02	1.6134300	5.35	1.6770965	5.68	1.7369512
5.03	1.6154200	5.36	1.6789639	5.69	1.7387102
5.04	1.6174060	5.37	1.6808278	5.70	1.7404661
5.05	1.6193882	5.38	1.6826882	5.71	1.7422189
5.06	1.6213664	5.39	1.6845453	5.72	1.7439687
5.07	1.6233408	5.40	1.6863989	5.73	1.7457155
5.08	1.6253112	5 41	1.6882491	5.74	1.7474591
5.09	1.6272778	5.42	1.6900958	5.75	1.7491998
5.10	1.6292405	5.43	1.6919391	5.76	1.7509374
5.11	1.6311994	5.44	1.6937790	5.77	1.7526720
5.12	1.6331544	5.45	1.6956155	5.78	1.7544036
5.13	1.6351056	5.46	1.6974487	5.79	1.7561323
5.14	1.6370530	5.47	1.6992786	5.80	1.7578579
5.15	1.6389967	5.48	1.7011051	5.81	1.7595805
5.16	1.6409365	5.49	1.7029282	5.82	1.7613002
5.17	1.6428726	5.50	1.7047481	5.83	1.7630170
5.18	1.6448050	5.51	1.7065646	5.84	1.7647308
5.19	1.6467336	5.52	1.7083778	5.85	1.7664416
5.20	1.6486586	5.53	1.7101878	5.86	1.7681496
5.21	1.6505798	5 54	1.7119944	5.87	1.7698546
5.22	1.6524974	5 55	1.7137979	5.88	1.7715567
5.23	1.6544112	5.56	1.7155981	5.89	1.7732559
5.24	1.6563214	5.57	1.7173950	5.90	1.7749523
5.25	1.6582280	5.58	1.7191887	5.91	1.7766458
5.26	1.6601310	5.59	1.7209792	5.92	1.7783364
5.27	1.6620303	5.60	1.7227666	5.93	1.7800242
5.28	1.6639260	5.61	1.7245507	5.94	1.7817091
5.29	1.6658182	5.62	1.7263316	5.95	1.7833912
5.30	1.6677068	5.63	1.7281094	5.96	1.7850704
5.31	1.6695918	5 64	1.7298840	5.97	1.7867469
5.32	1.6714733	5.65	1.7316555	5.98	1.7884205
5.33	1.6733512	5.66	1.7334238	5.99	1.7900914
5.34	1.6752256	5.67	1.7351891	6.00	1.7917594

TAB. XV.

N.	Logarith.	N.	Logarith.	N.	Logarith.
6.01	1.7934247	6.34	1.8468787	6.67	1.8976198
6.02	1.7950872	6.35	1.8484547	6.68	1.8991179
6.03	1.7967470	6.36	1.8500283	6.69	1.9006138
6.04	1.7984040	6.37	1.8515994	6.70	1.9021075
6.05	1.8000582	6.38	1.8531680	6.71	1.9035989
6.06	1.8017098	6.39	1.8547342	6.72	1.9050881
6.07	1.8033586	6.40	1.8562979	6.73	1.9065751
6.08	1.8050047	6.41	1.8578592	6.74	1.9080600
6.09	1.8066481	6.42	1.8594181	6.75	1.9095425
6.10	1.8082887	6.43	1.8609745	6.76	1.9110228
6.11	1.8099267	6.44	1.8625285	6.77	1.9125011
6.12	1.8115621	6.45	1.8640801	6.78	1.9139771
6.13	1.8131947	6.46	1.8656293	6.79	1.9154509
6.14	1.8148247	6.47	1.8671761	6.80	1.9169226
6.15	1.8164520	6.48	1.8687205	6.81	1.9183921
6.16	1.8180767	6.49	1.8702625	6.82	1.9198594
6.17	1.8196988	6.50	1.8718021	6.83	1.9213247
6.18	1.8213182	6.51	1.8733394	6.84	1.9227877
6.19	1.8229351	6.52	1.8748743	6.85	1.9242486
6.20	1.8245493	6.53	1.8764069	6.86	1.9257074
6.21	1.8261608	6.54	1.8779371	6.87	1.9271641
6.22	1.8277699	6.55	1.8794650	6.88	1.9286186
6.23	1.8293763	6.56	1.8809906	6.89	1.9300710
6.24	1.8309801	6.57	1.8825138	6.90	1.9315214
6.25	1.8325814	6.58	1.8840347	6.91	1.9329696
6.26	1.8341801	6.59	1.8855533	6.92	1.9344157
6.27	1.8357763	6.60	1.8870696	6.93	1.9358598
6.28	1.8373699	6.61	1.8885837	6.94	1.9373017
6.29	1.8389610	6.62	1.8900954	6.95	1.9387416
6.30	1.8405496	6.63	1.8916048	6.96	1.9401794
6.31	1.8421356	6.64	1.8931119	6.97	1.9416152
6.32	1.8437191	6.65	1.8946168	6.98	1.9430489
6.33	1.8453002	6.66	1.8961194	6.99	1.9444805
6.34	1.8468787	6.67	1.8976198	7.00	1.9459101

TAB. XV.

N.	Logarith.	N.	Logarith.	N.	Logarith.
7.01	1.9473376	7.34	1.9933387	7.67	2.0373166
7.02	1.9487632	7.35	1.9947002	7.68	2.0386195
7.03	1.9501866	7.36	1.9960599	7.69	2.0399207
7.04	1.9516080	7.37	1.9974177	7.70	2.0412203
7.05	1.9530275	7.38	1.9987736	7.71	2.0425181
7.06	1.9544449	7.39	2.0001278	7.72	2.0438143
7.07	1.9558604	7.40	2.0014800	7.73	2.0451088
7.08	1.9572739	7.41	2.0028305	7.74	2.0464016
7.09	1.9586853	7.42	2.0041790	7.75	2.0476928
7.10	1.9600947	7.43	2.0055258	7.76	2.0489823
7.11	1.9615022	7.44	2.0068708	7.77	2.0502701
7.12	1.9629077	7.45	2.0082140	7.78	2.0515563
7.13	1.9643112	7.46	2.0095553	7.79	2.0528408
7.14	1.9657127	7.47	2.0108949	7.80	2.0541237
7.15	1.9671123	7.48	2.0122327	7.81	2.0554049
7.16	1.9685099	7.49	2.0135687	7.82	2.0566845
7.17	1.9699056	7.50	2.0149030	7.83	2.0579624
7.18	1.9712993	7.51	2.0162354	7.84	2.0592388
7.19	1.9726911	7.52	2.0175661	7.85	2.0605135
7.20	1.9740810	7.53	2.0188950	7.86	2.0617866
7.21	1.9754689	7.54	2.0202221	7.87	2.0630580
7.22	1.9768549	7.55	2.0215475	7.88	2.0643278
7.23	1.9782390	7.56	2.0228711	7.89	2.0655961
7.24	1.9790212	7.57	2.0241929	7.90	2.0668627
7.25	1.9810014	7.58	2.0255131	7.91	2.0681277
7.26	1.9823798	7.59	2.0268315	7.92	2.0693911
7.27	1.9837562	7.60	2.0281482	7.93	2.0706530
7.28	1.9851308	7.61	2.0294631	7.94	2.0719132
7.29	1.9865035	7.62	2.0307763	7.95	2.0731719
7.30	1.9878743	7.63	2.0320878	7.96	2.0744290
7.31	1.9892432	7.64	2.0333976	7.97	2.0756845
7.32	1.9906103	7.65	2.0347056	7.98	2.0769384
7.33	1.9919754	7.66	2.0360119	7.99	2.0781907
7.34	1.9933387	7.67	2.0373166	8.00	2.0794415

TAB. XV.

N.	Logarith.	N.	Logarith.	N.	Logarith.
8.01	2.0806907	8.34	2.1210632	8.67	2.1598687
8.02	2.0819384	8.35	2.1222615	8.68	2.1610215
8.03	2.0831845	8.36	2.1234584	8.69	2.1621729
8.04	2.0844290	8.37	2.1246539	8.70	2.1633230
8.05	2.0856720	8.38	2.1258479	8.71	2.1644718
8.06	2.0869135	8.39	2.1270405	8.72	2.1656192
8.07	2.0881534	8.40	2.1282317	8.73	2.1667653
8.08	2.0893918	8.41	2.1294214	8.74	2.1679101
8.09	2.0906287	8.42	2.1306098	8.75	2.1690536
8.10	2.0918640	8.43	2.1317967	8.76	2.1701959
8.11	2.0930984	8.44	2.1329822	8.77	2.1713367
8.12	2.0943306	8.45	2.1341664	8.78	2.1724763
8.13	2.0955613	8.46	2.1353491	8.79	2.1736146
8.14	2.0967905	8.47	2.1365304	8.80	2.1747517
8.15	2.0980182	8.48	2.1377104	8.81	2.1758874
8.16	2.0992444	8.49	2.1388889	8.82	2.1770218
8.17	2.1004691	8.50	2.1400661	8.83	2.1781550
8.18	2.1016923	8.51	2.1412419	8.84	2.1792868
8.19	2.1029140	8.52	2.1424163	8.85	2.1804174
8.20	2.1041341	8.53	2.1435893	8.86	2.1815467
8.21	2.1053529	8.54	2.1447609	8.87	2.1826747
8.22	2.1065702	8.55	2.1459312	8.88	2.1838015
8.23	2.1077861	8.56	2.1471001	8.89	2.1849270
8.24	2.1089998	8.57	2.1482676	8.90	2.1860512
8.25	2.1102128	8.58	2.1494339	8.91	2.1871742
8.26	2.1114243	8.59	2.1505987	8.92	2.1882959
8.27	2.1126343	8.60	2.1517622	8.93	2.1894163
8.28	2.1138428	8.61	2.1529243	8.94	2.1905355
8.29	2.1150499	8.62	2.1540851	8.95	2.1916535
8.30	2.1162555	8.63	2.1552445	8.96	2.1927702
8.31	2.1174596	8.64	2.1564026	8.97	2.1938856
8.32	2.1186622	8.65	2.1575593	8.98	2.1949998
8.33	2.1198634	8.66	2.1587147	8.99	2.1961128
8.34	2.1210632	8.67	2.1598687	9.00	2.1972245

TAB. XV.

N.	Logarith.	N.	Logarith.	N.	Logarith.
9.01	2.1983350	9.34	2.2343062	9.67	2.2690282
9.02	2.1994443	9.35	2.2353763	9.68	2.2700618
9.03	2.2005523	9.36	2.2364452	9.69	2.2710944
9.04	2.2016591	9.37	2.2375130	9.70	2.2721258
9.05	2.2027647	9.38	2.2385797	9.71	2.2731562
9.06	2.2038691	9.39	2.2396452	9.72	2.2741856
9.07	2.2049722	9.40	2.2407096	9.73	2.2752138
9.08	2.2060741	9.41	2.2417729	9.74	2.2762411
9.09	2.2071748	9.42	2.2428350	9.75	2.2772673
9.10	2.2082744	9.43	2.2438960	9.76	2.2782924
9.11	2.2093727	9.44	2.2449559	9.77	2.2793165
9.12	2.2104697	9.45	2.2460147	9.78	2.2803395
9.13	2.2115656	9.46	2.2470723	9.79	2.2813614
9.14	2.2126603	9.47	2.2481288	9.80	2.2823823
9.15	2.2137538	9.48	2.2491843	9.81	2.2834022
9.16	2.2148461	9.49	2.2502386	9.82	2.2844211
9.17	2.2159372	9.50	2.2512917	9.83	2.2854389
9.18	2.2170272	9.51	2.2523438	9.84	2.2864556
9.19	2.2181160	9.52	2.2533948	9.85	2.2874714
9.20	2.2192034	9.53	2.2544446	9.86	2.2884861
9.21	2.2202898	9.54	2.2554934	9.87	2.2894998
9.22	2.2213750	9.55	2.2565411	9.88	2.2905124
9.23	2.2224590	9.56	2.2575877	9.89	2.2915241
9.24	2.2235418	9.57	2.2586332	9.90	2.2925347
9.25	2.2246235	9.58	2.2596776	9.91	2.2935443
9.26	2.2257040	9.59	2.2607209	9.92	2.2945529
9.27	2.2267833	9.60	2.2617631	9.93	2.2955604
9.28	2.2278615	9.61	2.2628042	6.94	2.2965670
9.29	2.2289385	9.62	2.2638442	9.95	2.2975725
9.30	2.2300144	9.63	2.2648832	9.96	2.2985770
9.31	2.2310890	9.64	2.2659211	9.97	2.2995806
9.32	2.2321626	9.65	2.2669579	9.98	2.3005831
9.33	2.2332350	9.66	2.2679936	9.99	2.3015846
9.34	2.2343062	9.67	2.2690282	10.00	2.3025851

TAB. XVI.

LOGARITHMI HYPERBOLICI.

log. 1 = 0,00000,00000,00000,00000,00000.

log. 2 = 0,69314 71805 59945 30941 72321

log. 3 = 1,09861 22886 68109 69139 52452

log. 4 = 1,38629 43611 19890 61883 44642

log. 5 = 1,60943 79124 34100 37460 07593

log. 6 = 1,79175 94692 28055 00081 24773

log. 7 = 1,94591 01490 55313 30510 54639

log. 8 = 2,07944 15416 79835 92825 16964

log. 9 = 2,19722 45773 36219 38279 04905

log. 10 = 2,30258 50929 94045 68401 79914

BASIS LOGARITHMORUM BRIGGIANORUM.

$$\frac{1}{\text{log. } 10} = 0,43429\ 44819\ 03251\ 82765\ 11289.$$

TAB. XVII.

$2^n \cdot 3^m \cdot 5^p \cdot 7^q$.

1	64	225	512	1000	1715	2688	4050	6000	8192
2	70	240	525	1008	1728	2700	4096	6048	8232
3	72	243	540	1024	1750	2744	4116	6075	8400
4	75	245	560	1029	1764	2800	4200	6125	8505
5	80	250	567	1050	1792	2835	4320	6144	8575
6	81	252	576	1080	1800	2880	4374	6175	8640
7	84	256	588	1120	1844	2916	4375	6250	8748
8	90	270	600	1125	1875	2940	4410	6272	8750
9	96	280	625	1134	1890	3000	4480	6300	8820
10	98	288	630	1152	1920	3072	4500	6400	8960
12	100	294	640	1176	1960	3087	4536	6480	9000
14	105	300	648	1200	2000	3125	4608	6561	9072
15	108	315	672	1215	2016	3136	4704	6615	9216
16	112	320	675	1225	2025	3150	4725	6720	9375
18	120	324	686	1250	2048	3200	4800	6750	9408
20	125	336	700	1260	2058	3240	4802	6804	9450
21	126	343	720	1280	2100	3360	4860	6860	9600
24	128	350	729	1296	2160	3375	4900	6912	9604
25	135	360	735	1323	2187	3402	5000	7000	9720
27	140	375	750	1344	2205	3430	5040	7056	9800
28	144	378	756	1350	2240	3456	5103	7168	10000
30	147	384	768	1372	2250	3500	5120	7200	10080
32	150	392	784	1400	2268	3528	5145	7203	10125
35	160	400	800	1440	2304	3584	5184	7290	10206
36	162	405	810	1458	2352	3600	5250	7350	10240
40	168	420	840	1470	2400	3645	5292	7376	10290
42	175	432	864	1500	2401	3675	5376	7500	10368
45	180	441	875	1512	2430	3688	5400	7560	10500
48	189	448	882	1536	2450	3750	5488	7680	10584
49	192	450	896	1568	2500	3780	5600	7840	10752
50	196	480	900	1575	2520	3840	5625	7875	10800
54	200	486	945	1600	2560	3920	5670	7938	10935
56	210	490	960	1620	2592	3969	5760	8000	10976
60	216	500	972	1680	2625	4000	5832	8064	11025
63	224	504	980	1701	2646	4032	5880	8100	11200

TAB. XVIII.
FUNCTIONES HYPERBOLICAE.

$$\text{log. hyp. } e = 1.$$

$$\text{ſin. hyp. } \omega = \frac{e^{\omega} - e^{-\omega}}{2}$$

$$\text{coſ. hyp. } \omega = \frac{e^{\omega} + e^{-\omega}}{2}$$

$$\text{ſin. } h\,(y+z) = \text{ſin. } hy.\ \text{coſ. } hz + \text{coſ. } hy.\ \text{ſin. } hz$$
$$\text{ſin. } h\,(y-z) = \text{ſin. } hy.\ \text{coſ. } hz - \text{coſ. } hy.\ \text{ſin. } hz$$
$$\text{coſ. } h\,(y+z) = \text{coſ. } hy.\ \text{coſ. } hz + \text{ſin. } hy.\ \text{ſin. } hz$$
$$\text{coſ. } h\,(y-z) = \text{coſ. } hy.\ \text{coſ. } hz - \text{ſin. } hy.\ \text{ſin. } hz$$

$$2\ \text{ſin. } hy.\ \text{coſ. } hz = \text{ſin. } h\,(y+z) + \text{ſin. } h\,(y-z)$$
$$2\ \text{coſ. } hy.\ \text{coſ. } hz = \text{ſin. } h\,(y+z) - \text{ſin. } h\,(y-z)$$
$$2\ \text{coſ. } hy.\ \text{ſin. } hz = \text{coſ. } h\,(y+z) + \text{coſ. } h\,(y-z)$$
$$2\ \text{ſin. } hy.\ \text{ſin. } hz = \text{coſ. } h\,(y+z) - \text{coſ. } h\,(y-z)$$

$$\text{ſin. } hy + \text{ſin. } hz = 2\ \text{ſin. } h\,\frac{y+z}{2}\ \text{coſ. } h\,\frac{y-z}{2}$$

$$\text{ſin. } hy - \text{ſin. } hz = 2\ \text{coſ. } h\,\frac{y+z}{2}.\ \text{ſin. } h\,\frac{y-2}{2}$$

$$\text{coſ. } hy + \text{coſ. } hz = 2\ \text{coſ. } h\,\frac{y+z}{2}.\ \text{coſ. } h\,\frac{y-z}{2}$$

$$\text{coſ. } hy - \text{coſ. } hz = 2\ \text{ſin. } h\,\frac{y+z}{2}.\ \text{ſin. } h\,\frac{y-z}{2}$$

$$\text{tang. } hy = \text{ſin. } hy : \text{coſ. } hy$$
$$\text{cot. } hy = \text{coſ. } hy : \text{ſin. } hy.$$

$$\text{tang. } h\,(y+z) = \frac{\text{tang. } hy + \text{tang. } hz}{1 + \text{tang. } hz}$$

$$\text{tang. } h\,(y-z) = \frac{\text{tang. } hy - \text{tang. } hz}{1 - \text{tang. } hy.\ \text{tang. } hz}$$

$$2\,(\text{ſin. } hy)^2 = \text{coſ. } h\,2y - 1$$
$$2\,(\text{coſ. } hy)^2 = \text{coſ. } h\,2y + 1$$
$$(\text{coſ. } hy)^2 - (\text{ſin. } hy)^2 = 1$$
$$(\text{coſ. } hy)^2 + (\text{ſin. } hy)^2 = \text{coſ. } h\,2y.$$

TAB. XIX.

SINUS TERNORUM GRADUUM QUADRANTIS.

ſin. $3^\circ = \frac{1}{8}\sqrt{(5+\sqrt{5})} + \frac{1}{8}\sqrt{\frac{15}{2}} - \frac{1}{8}\sqrt{\frac{3}{2}}$
$- \frac{1}{8}\sqrt{(15+3\sqrt{5})} + \frac{1}{8}\sqrt{\frac{5}{2}} - \frac{1}{8}\sqrt{\frac{1}{2}}$
ſin. $6^\circ = \frac{1}{8}\sqrt{(30-6\sqrt{5})} - \frac{1}{8}\sqrt{5} - \frac{1}{8}$
ſin. $9^\circ = \frac{1}{4}\sqrt{\frac{5}{2}} + \frac{1}{4}\sqrt{\frac{1}{2}} - \frac{1}{4}\sqrt{(5-\sqrt{5})}$
ſin. $12^\circ = \frac{1}{8}\sqrt{(10+2\sqrt{5})} - \frac{1}{8}\sqrt{15} + \frac{1}{8}\sqrt{3}$
ſin. $15^\circ = \sqrt{\frac{3}{8}} - \sqrt{\frac{1}{8}}$
ſin. $18^\circ = \frac{1}{4}\sqrt{5} - \frac{1}{4}$
ſin. $21^\circ = \frac{1}{8}\sqrt{(15-3\sqrt{5})} + \frac{1}{8}\sqrt{\frac{5}{2}} + \frac{1}{8}\sqrt{\frac{1}{2}}$
$- \frac{1}{8}\sqrt{\frac{15}{2}} - \frac{1}{8}\sqrt{\frac{3}{2}} + \frac{1}{8}\sqrt{(5-\sqrt{5})}$
ſin. $24^\circ = \frac{1}{8}\sqrt{15} + \frac{1}{8}\sqrt{3} - \frac{1}{8}\sqrt{(10-2\sqrt{5})}$
ſin. $27^\circ = \frac{1}{4}\sqrt{(5+\sqrt{5})} - \frac{1}{4}\sqrt{\frac{5}{2}} + \frac{1}{4}\sqrt{\frac{1}{2}}$
ſin. $30^\circ = \frac{1}{2}$
ſin. $33^\circ = \frac{1}{8}\sqrt{(15+3\sqrt{5})} + \frac{1}{8}\sqrt{\frac{5}{2}} - \frac{1}{8}\sqrt{\frac{1}{2}}$
$- \frac{1}{8}\sqrt{(5+\sqrt{5})} + \frac{1}{8}\sqrt{\frac{15}{2}} - \frac{1}{8}\sqrt{\frac{3}{2}}$
ſin. $36^\circ = \frac{1}{4}\sqrt{(10-2\sqrt{5})}$
ſin. $39^\circ = \frac{1}{8}\sqrt{\frac{15}{2}} + \frac{1}{8}\sqrt{\frac{3}{2}} + \frac{1}{8}\sqrt{(5-\sqrt{5})}$
$- \frac{1}{8}\sqrt{(15-3\sqrt{5})} + \frac{1}{8}\sqrt{\frac{5}{2}} + \frac{1}{8}\sqrt{\frac{1}{2}}$
ſin. $42^\circ = \frac{1}{8}\sqrt{(30+6\sqrt{5})} - \frac{1}{8}\sqrt{5} + \frac{1}{8}$
ſin. $45^\circ = \sqrt{\frac{1}{2}}$

TAB. XIX.

SINUS TERNORUM GRADUUM QUADRANTIS.

ſin. $48^\circ = \frac{1}{8}\sqrt{(10+2\sqrt{5})} + \frac{1}{8}\sqrt{15} - \frac{1}{8}\sqrt{3}$

ſin. $51^\circ = \frac{1}{8}\sqrt{\frac{15}{2}} + \frac{1}{8}\sqrt{\frac{3}{2}} + \frac{1}{8}\sqrt{(5-\sqrt{5})}$
$+ \frac{1}{8}\sqrt{(15-3\sqrt{5})} - \frac{1}{8}\sqrt{\frac{5}{2}} - \frac{1}{8}\sqrt{\frac{1}{2}}$

ſin. $54^\circ = \frac{1}{4}\sqrt{5} + \frac{1}{4}$

ſin. $57^\circ = \frac{1}{8}\sqrt{(15+3\sqrt{5})} + \frac{1}{8}\sqrt{\frac{5}{2}} - \frac{1}{8}\sqrt{\frac{1}{2}}$
$+ \frac{1}{8}\sqrt{(5+\sqrt{5})} - \frac{1}{8}\sqrt{\frac{15}{2}} + \frac{1}{8}\sqrt{\frac{3}{2}}$

ſin. $60^\circ = \frac{1}{2}\sqrt{3}$

ſin. $63^\circ = \frac{1}{4}\sqrt{(5+\sqrt{5})} + \frac{1}{4}\sqrt{\frac{5}{2}} - \frac{1}{4}\sqrt{\frac{1}{2}}$

ſin. $66^\circ = \frac{1}{8}\sqrt{(30-6\sqrt{5})} + \frac{1}{8}\sqrt{5} + \frac{1}{8}$

ſin. $69^\circ = \frac{1}{8}\sqrt{(15-3\sqrt{5})} + \frac{1}{8}\sqrt{\frac{5}{2}} + \frac{1}{8}\sqrt{\frac{1}{2}}$
$+ \frac{1}{8}\sqrt{\frac{15}{2}} + \frac{1}{8}\sqrt{\frac{3}{2}} - \frac{1}{8}\sqrt{(5-\sqrt{5})}$

ſin. $72^\circ = \frac{1}{4}\sqrt{(10+2\sqrt{5})}$

ſin. $75^\circ = \sqrt{\frac{3}{8}} + \sqrt{\frac{1}{8}}$

ſin. $78^\circ = \frac{1}{8}\sqrt{(30+6\sqrt{5})} + \frac{1}{8}\sqrt{5} - \frac{1}{8}$

ſin. $81^\circ = \frac{1}{4}\sqrt{\frac{5}{2}} + \frac{1}{4}\sqrt{\frac{1}{2}} + \frac{1}{4}\sqrt{(5-\sqrt{5})}$

ſin. $84^\circ = \frac{1}{8}\sqrt{15} + \frac{1}{8}\sqrt{3} + \frac{1}{8}\sqrt{(10-2\sqrt{5})}$

ſin. $87^\circ = \frac{1}{8}\sqrt{(5+\sqrt{5})} + \frac{1}{8}\sqrt{\frac{15}{2}} - \frac{1}{8}\sqrt{\frac{\overset{3}{\cancel{5}}}{2}}$
$+ \frac{1}{8}\sqrt{(15+3\sqrt{5})} - \frac{1}{8}\sqrt{\frac{5}{2}} + \frac{1}{8}\sqrt{\frac{1}{2}}$

ſin. $90^\circ = 1.$

$$\text{ſin.}\,(y+z) = \text{ſin.}\,y.\ \text{coſ.}\,z + \text{coſ.}\,y.\ \text{ſin.}\,z$$
$$\text{ſin.}\,(y-z) = \text{ſin.}\,y.\ \text{coſ.}\,z - \text{coſ.}\,y.\ \text{ſin.}\,z$$
$$\text{coſ.}\,(y+z) = \text{coſ.}\,y.\ \text{coſ.}\,z - \text{ſin.}\,y.\ \text{ſin.}\,z$$
$$\text{coſ.}\,(y-z) = \text{coſ.}\,y.\ \text{coſ.}\,z + \text{ſin.}\,y.\ \text{ſin.}\,z$$

$$2\ \text{ſin.}\,y.\ \text{coſ.}\,z = \text{ſin.}\,(y+z) + \text{ſin.}\,(y-z)$$
$$2\ \text{ſin.}\,z.\ \text{coſ.}\,y = \text{ſin.}\,(y+z) - \text{ſin.}\,(y-z)$$
$$2\ \text{coſ.}\,y.\ \text{coſ.}\,z = \text{coſ.}\,(y-z) + \text{coſ.}\,(y+z)$$
$$2\ \text{ſin.}\,y.\ \text{ſin.}\,z = \text{coſ.}\,(y-z) - \text{coſ.}\,(y+z)$$

$$\text{ſin.}\,y + \text{ſin.}\,z = 2.\ \text{ſin.}\,\frac{y+z}{2}.\ \text{coſ.}\,\frac{y-z}{2}$$
$$\text{ſin.}\,y - \text{ſin.}\,z = 2.\ \text{coſ.}\,\frac{y+z}{2}.\ \text{ſin.}\,\frac{y-z}{2}$$
$$\text{coſ.}\,y + \text{coſ.}\,z = 2.\ \text{coſ.}\,\frac{y+z}{2}.\ \text{coſ.}\,\frac{y-z}{2}$$
$$\text{coſ.}\,y - \text{coſ.}\,z = 2.\ \text{ſin.}\,\frac{y+z}{2}.\ \text{ſin.}\,\frac{y-z}{2}$$

$$\text{tang.}\,(y+z) = (\text{tang.}\,y + \text{tang.}\,z) : (1 - \text{tang.}\,y.\ \text{tang.}\,z)$$
$$\text{tang.}\,(y-z) = (\text{tang.}\,y - \text{tang.}\,z) : (1 + \text{tang.}\,y.\ \text{tang.}\,z)$$
$$\text{cot.}\,(y+z) = (\text{cot.}\,y.\ \text{cot.}\,z - 1) : (\text{cot.}\,z + \text{cot.}\,y)$$
$$\text{cot.}\,(y-z) = (\text{cot.}\,y.\ \text{cot.}\,z + 1) : (\text{cot.}\,z - \text{cot.}\,y)$$

$$(\text{ſin.}\,y + \text{ſin.}\,z) : (\text{ſin.}\,y - \text{ſin.}\,z) = \text{tang.}\,\frac{y+z}{2} : \text{tang.}\,\frac{y-z}{2}$$
$$(\text{coſ.}\,y + \text{coſ.}\,z) : (\text{coſ.}\,z - \text{coſ.}\,y) = \text{cot.}\,\frac{y+z}{2} : \text{tang.}\,\frac{y-z}{2}$$
$$(\text{ſin.}\,y + \text{ſin.}\,z) : (\text{coſ.}\,y + \text{coſ.}\,z) = \text{tang.}\,\frac{y+z}{2} : 1$$
$$(\text{ſin.}\,y + \text{ſin.}\,z) : (\text{coſ.}\,z - \text{coſ.}\,y) = 1 : \text{tang.}\,\frac{y-z}{2}$$
$$(\text{ſin.}\,y - \text{ſin.}\,z) : (\text{coſ.}\,y + \text{coſ.}\,z) = \text{tang.}\,\frac{y-z}{2} : 1$$
$$(\text{ſin.}\,y - \text{ſin.}\,z) : (\text{coſ.}\,z - \text{coſ.}\,y) = 1 : \text{tang.}\,\frac{y+z}{2}$$

TAB. XX.

$$(\text{tang.}\, y + \text{t.}\, z) : (\text{t.}\, y - \text{t.}\, z) = \text{ſin.}\, (y + z) : \text{ſ.}\, (y - z)$$
$$(\text{cot.}\, z + \text{cot.}\, y) : (\text{cot.}\, z - \text{cot.}\, y) = \text{ſin.}\, (y + z) : \text{ſ.}\, (y - z)$$
$$(\text{tang.}\, y + \text{tang.}\, z) : (\text{cot.}\, z + \text{cot.}\, y) = \text{tang.}\, y : \text{cot.}\, z$$
$$(\text{tang.}\, y - \text{tang.}\, z) : (\text{cot.}\, z - \text{cot.}\, y) = \text{tang.}\, y : \text{cot.}\, z$$

$$(\text{ſ.}\, y + \text{ſ.}\, z) : (\text{coſ.}\, y + \text{coſ.}\, z) = (\text{coſ.}\, z - \text{coſ.}\, y) : (\text{ſ.}\, y - \text{ſ.}\, z)$$

$$\text{ſin.}\ 2y = 2\ \text{tang.}\, y : (1 + \text{tang.}\, y^2)$$
$$\text{tang.}\, 2y = 2\ \text{tang.}\, y : (1 - \text{tang.}\, y^2)$$
$$\text{coſ.}\ 2y = (1 - \text{tang.}\, y^2) : (1 + \text{tang.}\, y^2)$$

$$2\ \text{ſin.}\ y^2 = 1 - \text{coſ.}\ 2y$$
$$2\ \text{coſ.}\, y^2 = 1 + \text{coſ.}\ 2y$$
$$\text{coſ.}\ y^2 - \text{ſin.}\ y^2 = \text{coſ.}\ 2y$$
$$\text{coſ.}\ y + \text{ſin.}\ y = \text{ſin.}\ (45^\circ + y) . \surd 2$$
$$\text{coſ.}\ y - \text{ſin.}\ y = \text{ſin.}\ (45^\circ - y) . \surd 2$$
$$\text{tang.}\ \tfrac{1}{2} y = \text{ſin.}\, y : (1 + \text{coſ.}\, y) = (1 - \text{coſ.}\, y) : \text{ſin.}\, y$$
$$\text{tang.}\ (45^\circ + y) = \frac{1 + \text{tang.}\, y}{1 - \text{tang.}\, y} = \surd \left(\frac{1 + \text{ſin.}\ 2y}{1 - \text{ſin.}\ 2y} \right.$$
$$\text{cot.}\ y - \text{tang.}\ y = 2\ \text{cot.}\ 2y$$
$$\text{cot.}\ y + \text{tang.}\ y = 2\ \text{coſec}\ 2y$$
$$\text{coſec}\ 2y = \text{tang.}\ y + \text{cot.}\ 2y = \text{cot.}\, y - \text{cot.}\ 2y$$
$$\text{ſin.}\ \tfrac{1}{2} y = \tfrac{1}{2} \surd (1 + \text{ſ.}\, y) - \tfrac{1}{2} \surd (1 - \text{ſ.}\, y) = \surd \frac{1 - \text{coſ.}\, y}{2}$$
$$\text{coſ.}\ \tfrac{1}{2} y = \tfrac{1}{2} \surd (1 + \text{ſ.}\, y) + \tfrac{1}{2} \surd (1 - \text{ſ.}\, y) = \surd \frac{1 + \text{coſ.}\, y}{2}$$
$$\text{ſin.}\, y^2 - \text{ſ.}\, z^2 = \text{ſ.}\, y^2 . \text{coſ.}\, z^2 - \text{coſ.}\, y^2 . \text{ſ.}\, z^2 = \text{ſ.}\, (y + z) . \text{ſ.}\, (y - z)$$

TAB. XX.

$$\text{coſ.}\ \varphi = \text{coſ.}\ \varphi$$

$$2.\ \text{coſ.}\ \varphi^2 = \text{coſ.}\ 2\,\varphi + \tfrac{2}{2}$$

$$4.\ \text{coſ.}\ \varphi^3 = \text{coſ.}\ 3\,\varphi + 3\ \text{coſ.}\ \varphi$$

$$8.\ \text{coſ.}\ \varphi^4 = \text{coſ.}\ 4\,\varphi + 4\ \text{coſ.}\ 2\,\varphi + \tfrac{6}{2}$$

$$16.\ \text{coſ.}\ \varphi^5 = \text{coſ.}\ 5\,\varphi + 5\ \text{coſ.}\ 3\,\varphi + 10\,\text{coſ.}\ \varphi$$

$$32.\ \text{coſ.}\ \varphi^6 = \text{coſ.}\ 6\,\varphi + 6\ \text{coſ.}\ 4\,\varphi + 15\,\text{coſ.}\,2\varphi + \tfrac{20}{2}$$

$$64.\ \text{coſ.}\ \varphi^7 = \text{coſ.}\ 7\,\varphi + 7\ \text{coſ.}\ 5\,\varphi + 21\,\text{coſ.}\,3\varphi + 35\,\text{coſ.}\,\varphi$$

$$\text{ſin.}\ \varphi = \text{ſin.}\ \varphi$$

$$2.\ \text{ſin.}\ \varphi^2 = \tfrac{2}{2} - \text{coſ.}\ 2\,\varphi$$

$$4.\ \text{ſin.}\ \varphi^3 = 3\,\text{ſin.}\ \varphi - \text{ſin.}\ 3\,\varphi$$

$$8.\ \text{ſin.}\ \varphi^4 = \tfrac{6}{2} - 4\,\text{coſ.}\ 2\,\varphi + \text{coſ.}\ 4\,\varphi$$

$$16.\ \text{ſin.}\ \varphi^5 = 10\,\text{ſin.}\ \varphi - 5\,\text{ſin.}\ 3\,\varphi + \text{ſin.}\ 5\,\varphi$$

$$32.\ \text{ſin.}\ \varphi^6 = \tfrac{20}{2} - 15\,\text{coſ.}\ 2\,\varphi + 6\ \text{coſ.}\ 4\,\varphi - \text{coſ.}\,6\varphi$$

$$64.\ \text{ſin.}\ \varphi^7 = 35\,\text{ſin.}\ \varphi - 21\,\text{ſin.}\ 3\,\varphi + 7\,\text{ſin.}\ 5\,\varphi - \text{ſin.}\,7\varphi$$

$$\text{tang.}\ \varphi = \text{t.}\ \varphi$$

$$\text{tang.}\ 2\,\varphi = \frac{2\,\text{t.}\ \varphi}{1 - \text{t.}\varphi^2}$$

$$\text{tang.}\ 3\,\varphi = \frac{3\,\text{t.}\ \varphi - \text{t.}\ \varphi^3}{1 - 3\,\text{t.}\ \varphi^2}$$

$$\text{tang.}\ 4\,\varphi = \frac{4\,\text{t.}\ \varphi - 4\,\text{t.}\ \varphi^3}{1 - 6\,\text{t.}\ \varphi^2 + \text{t.}\ \varphi^4}$$

$$\text{tang.}\ 5\,\varphi = \frac{5\,\text{t.}\ \varphi - 10\,\text{t.}\ \varphi^3 + \text{t.}\ \varphi^5}{1 - 10\,\text{t.}\ \varphi^2 + 5\,\text{t.}\ \varphi^4}$$

$$\text{tang.}\ 6\,\varphi = \frac{6\,\text{t.}\ \varphi - 20\,\text{t.}\ \varphi^3 + 6\,\text{t.}\ \varphi^5}{1 - 15\,\text{t.}\ \varphi^2 + 15\,\text{t.}\ \varphi^4 - \text{t.}\ \varphi^6}$$

$$\text{tang.}\ 7\,\varphi = \frac{7\,\text{t.}\ \varphi - 35\,\text{t.}\ \varphi^3 + 21\,\text{t.}\ \varphi^5 - \text{t.}\ \varphi^7}{1 - 21\,\text{t.}\ \varphi^2 + 35\,\text{t.}\ \varphi^4 - 7\,\text{t.}\ \varphi^6}$$

TAB. XXI.

Triangulum rectilineum in R. rectang.

Fig. 1.

I. $b^2 = c^2 + k^2$

II. $k = b.\ \text{ſin.}\ a = b.\ \text{coſ.}\ b.$

III. $c = b.\ \text{coſ.}\ a = b.\ \text{ſin.}\ b.$

IV. $k = c.\ \text{tang.}\ a = c.\ \text{cot.}\ b.$

V. $c = k.\ \text{tang.}\ b = k.\ \text{cot.}\ a.$

Correlata ab utraque perpendiculi parte.

Fig. 2.

$$(A + B) : (a + b) = (a - b) : (A - B)$$
$$(A + \mathrm{a}) : (B + b) = (B - b) : (A - a)$$
$$A : a = \text{coſ.}\ d : \text{coſ.}\ D$$
$$A : a - \text{ſin.}\ c : \text{ſin.}\ C$$
$$B : b = \text{tang.}\ c : \text{tang.}\ C$$
$$B : b = \text{tang.}\ D : \text{tang.}\ d.$$

I. Latera et Angulus.

Fig. 3.

$$A^2 = B^2 + C^2 - 2\,BC\ \text{coſ.}\ a$$
$$\text{coſ.}\ a = (B^2 + C^2 - A^2) : 2\,BC$$
$$B = C\ \text{coſ.}\ a + \sqrt{}\,(A^2 - C^2\ \text{ſin.}\ a^2)$$

$$\text{ſin.}\ \tfrac{1}{2}\ a^2 = (A + B - C) \,.\, (A - B + C) : 4\,BC$$
$$\text{coſ.}\ \tfrac{1}{2}\ a^2 = (A + B + C) \,.\, (B + C - A) : 4\,BC$$

II. Anguli et latus. Caſus hic indeterminatus eſt.

III. Partes continuae.

$$B = B\ (\text{coſ.}\ c + \text{ſin.}\ c.\ \text{cot.}\ \mathrm{a}) = A\ \text{ſin.}\ (a + c) : \text{ſin.}\ a$$
$$\text{cot.}\ a = (B - A\ \text{coſ.}\ c) : \text{ſin.}\ c$$
$$A = B : \text{coſ.}\ c + \text{ſin.}\ c\ \text{cot.}\ a) = B\ \text{ſin.}\ a : \text{ſin.}\ (a + c)$$
$$\text{tang.}\ \tfrac{1}{2}\ c = [A\ \text{coſ.}\ a + \sqrt{}\,(A^2 - B^2\ \text{ſin.}\ a^2)] : (A + B)\ \text{ſin.}\ a$$

IV. Partes oppoſitae.

$$A.\ \text{ſin.}\ b = B.\ \text{ſin.}\ a.$$

TAB. XXI.

Triang. Sphaericum in R rectangulum.

Fig. 4.

coſ. b = cot. a. cot. b = coſ. c. coſ. k
coſ. a = tang. c. cot. b = ſin. b. coſ. k
ſin. c = tang. k. cot. a = ſin. b. ſin. b
coſ. b = tang. k. cot. b = ſin. a. coſ. c
ſin. k = tang. c. cot. b = ſin. a. ſin. b

Correlata ab utraque perpendiculi parte.

Fig. 5.

coſ. A : coſ. B = coſ. a : coſ. b
coſ. C : ſin. D = coſ. c : ſin. d
ſin. A : ſin. a = ſin. c : ſin. C
coſ. D : cot. A = coſ. d : cot. a
ſin. B : cot. C = ſin. b : cot. c
tang. B : tang. D = tang. b : tang. d

Fig. 6.

I. Latera et Angulus.

$\text{coſ. A} = \text{ſB. ſC. coſ. } a + \text{coſ. B. coſ. C.}$

$\text{coſ. } \tfrac{1}{2} a^2 = \text{ſin. } \frac{A+B+C.}{2} \text{ ſin. } \frac{B+C-A}{2} : \text{ſB.ſC}$

$\text{ſin. } \tfrac{1}{2} a^2 = \text{ſ } \frac{A+B-C.}{2} \text{ ſ } \frac{A-B+C}{2} : \text{ſB. ſC}$

$\text{tang. } \tfrac{1}{2} \text{B} = [\text{ſC. coſ. } a + \sqrt{(\text{ſA}^2 - \text{ſC}^2 \text{. ſ}a^2)}] : (\text{coſ.C} + \text{coſ.A})$

II. Anguli et latus.

$\text{coſ. } a = \text{ſin. } b \text{. ſin. } c \text{. coſ. A} - \text{coſ. } b \text{. coſ. } c$

$\text{ſin. } \tfrac{1}{2} \text{A}^2 = - \text{coſ. } \frac{a+b+c.}{2} \text{ coſ. } \frac{c+b-a}{2} : \text{ſin. } b \text{. ſin. } c.$

$\text{coſ. } \tfrac{1}{2} \text{A}^2 = + \text{coſ. } \frac{a+c-b.}{2} \text{ coſ. } \frac{a-c+b}{2} : \text{ſin. } b \text{. ſin. } c.$

$\text{tang. } \tfrac{1}{2} b = [- \text{ſ}c \text{. coſ. A} + \sqrt{(\text{ſ}a^2 - \text{ſ}c^2 \text{. ſA}^2)}] : (\text{coſ. } c - \text{coſ. } a)$

III. Partes continuae.

$\text{cot. A} = (\text{coſ. } c \text{. coſ. B.} + \text{ſ}c \text{. cot. } a) : \text{ſin. B.}$

$\text{cot. } a = (\text{ſB. cot. A} - \text{coſ. } c \text{. coſ. B}) : \text{ſin. } c$

$\text{tang. } \tfrac{1}{2} \text{B} = [- \text{coſ. A. ſ}a + \sqrt{(\text{ſ}a^2 - \text{ſ}c^2 \text{. ſA}^2)}] : \text{ſA. ſ}(a - c)$

$\text{tang. } \tfrac{1}{2} \text{C} = [+ \text{ſA. coſ. } a + \sqrt{(\text{ſA}^2 - \text{ſB}^2 \text{. ſ}a^2)}] : \text{ſ}a \text{. ſ(B+A).}$

IV. Partes oppoſitae.

$\text{ſA. ſ}b = \text{ſB. ſ}a.$

TAB. XXI.

I. Latera et Angulus.

Fig. 7.

tang. $x =$ tang. B. coſ. A

coſ. B : coſ. $x =$ coſ. a : coſ. y

$x + y =$ C

Data	Quaeſitum
A, B, a	C
A, B, C	a

II. Anguli et latus.

Fig. 8.

cot. $x =$ tang. B. coſ. A.

coſ. B : ſin. $x =$ coſ. a : ſin. y

$x + y =$ C

Data	Quaeſitum
A, B, a	C
A, B, C	a

III. Partes continuae.

Fig. 9.

tang. $x =$ tang. B. coſ. A.

cot. A : ſin. $x =$ cot. b : ſin. y

$x + y =$ C

Data	Quaeſitum
A, B, b	C
A, B, C	b

Fig. 10.

cot. $x =$ tang. B. coſ. A

cot. A : coſ. $x =$ cot. b : coſ. y

$x + y =$ C

Data	Quaeſitum
A, B, b	C
A, B, C	b

TAB. XXII.

Relationes cyclometricæ in fractionibus rationalibus quam proxime difinitæ.

$$\frac{\text{Periph.}}{\text{Diam.}} = \frac{3}{1}, \frac{22}{7}, \frac{333}{106}, \frac{355}{113} \ \text{\&c.}$$

$$\frac{\text{area circ.}}{\text{quadr. diam.}} = \frac{3}{4}, \frac{4}{5}, \frac{7}{9}, \frac{11}{14}, \frac{172}{219}, \frac{355}{452} \ \text{\&c.}$$

$$\frac{\text{Solid.Sphær.}}{\text{cubus diam.}} = \frac{1}{2}, \frac{11}{21}, \frac{111}{212}, \frac{122}{233}, \frac{233}{445}, \frac{355}{678}, \ \text{\&c.}$$

$$\sqrt[2]{\left(\frac{\text{area circ.}}{\text{quad. latus}}\right)} = \frac{8}{7}, \frac{9}{8}, \frac{35}{31}, \frac{44}{39}, \frac{123}{109}, \frac{167}{148}, \ \text{\&c.}$$

$$\sqrt[3]{\left(\frac{\text{ſolid. ſph.}}{\text{cubi latus}}\right)} = \frac{5}{4}, \frac{31}{25}, \frac{67}{54}, \frac{567}{457}, \frac{3469}{2796}, \frac{21381}{17233} \ \text{\&c.}$$

$$\frac{\text{diam. \& alt. cylindri}}{\text{latus cubi}} = \frac{12}{11}, \frac{13}{12}, \frac{168}{155}, \frac{349}{322}, \ \text{\&c.}$$

$$\frac{\text{Periph.}}{\text{Diam.}} = 3 + \frac{1}{7} - \frac{1}{800} - \frac{1}{70000} - \frac{1}{5000000}$$

$$- \frac{1}{3^{\text{VIII}}} - \frac{1}{5^{\text{IX}}} - \frac{1}{5^{\text{X}}} + \frac{1}{4^{\text{XIII}}}$$

$$- \frac{1}{2^{\text{XIV}}} - \text{\&c.}$$

$$\frac{\text{Periph.}}{\text{Diam.}} = \frac{3}{1}, \frac{22}{7}, \frac{333}{106}, \frac{355}{113}, \frac{103993}{33102}, \frac{104348}{33215},$$

$$\frac{208341}{66317}, \frac{312689}{99532}, \frac{833719}{265381}, \frac{1146408}{364913},$$

$$\frac{4272943}{1300120}, \frac{5419351}{1725033}, \frac{80143857}{25510582}, \frac{165707065}{52746197},$$

$$\frac{245850922}{78256779}, \frac{411557087}{131002970},$$

TAB. XXIII.

1	.	.17453	292519	943295	769236	908
2	.	.34906	585039	886591	538473	815
3	.	.52359	877559	829887	307710	723
4	.	.69813	170079	773183	076947	631
5	.	.87266	462599	716478	846184	538
6	.	104719	755119	659774	615421	446
7	.	122173	047639	603070	384658	354
8	.	139626	340159	546366	153895	261
9	.	157079	632679	489661	923132	169
10	.	174532	925199	432957	692369	077
11	.	191986	217719	376253	461605	985
12	.	209439	510239	319549	230842	892
13	.	226892	802759	262845	000079	800
14	.	244346	095279	206140	769316	708
15	.	261799	387799	149436	538553	616
16	.	279252	680319	092732	307790	523
17	.	296705	972839	036028	077027	431
18	.	314159	265358	979323	846264	338
19	.	331612	557878	922619	615501	246
20	.	349065	850398	865915	384738	154
21	.	366519	142918	809211	153975	061
22	.	383972	435438	752506	923211	969
23	.	401425	727958	695802	692448	877
24	.	418879	020478	639098	461685	784
25	.	436332	312998	582394	230922	692
26	.	453785	605518	525690	000159	600
27	.	471238	898038	468985	769396	508
28	.	488692	190558	412281	538633	415
29	.	506145	483078	355577	307870	323
30	.	523598	775598	298873	077107	231
31	.	541052	068118	242168	846344	138
32	.	558505	360638	185464	615581	046
33	.	575958	653158	128760	384817	954
34	.	593411	945678	072056	154054	862
35	.	610865	238198	015351	923291	769
36	.	628318	530717	958647	692528	677

TAB. XXIII.

37	.	645771	823237	901943	461765	585
38	.	663225	115757	845239	231002	492
39	.	680678	408277	788535	000239	400
40	.	698131	700797	731830	769476	307
41	.	715584	993317	675126	538713	215
42	.	733038	285837	618422	307950	123
43	.	750491	578357	561718	077187	031
44	.	767944	870877	505013	846423	938
45	.	785398	163397	448309	615660	846
46	.	802851	455917	391605	384897	754
47	.	820304	748437	334901	154134	661
48	.	837758	040957	278196	923371	569
49	.	855211	333477	221492	692608	477
50	.	872664	625997	164788	461845	384
51	.	890117	918517	108084	231082	292
52	.	907571	211037	051380	000319	200
53	.	925024	503556	994675	769556	107
54	.	942477	796076	937971	538793	015
55	.	959931	088596	881267	308029	923
56	.	977384	381116	824563	077266	830
57	.	994837	673636	767858	846503	738
58	I	012290	966156	711154	615740	646
59	I	029744	258676	654450	384977	554
60	I	047197	551196	597746	154214	461
61	I	064650	843716	541041	923451	369
62	I	082104	136236	484337	692688	277
63	I	099557	428756	427633	461925	184
64	I	117010	721276	370929	231162	092
65	I	134464	013796	314225	000399	000
66	I	151917	306316	257520	769635	907
67	I	169370	598836	200816	538872	815
68	I	186823	891356	144112	308109	723
69	I	204277	183876	087408	077346	630
70	I	221730	476396	030703	846583	538
71	I	239183	768915	973999	615820	446
72	I	256637	061435	917295	385057	353

TAB. XXIII.

73	1	274090	353955	860591	154294	261
74	1	291543	646475	803886	923531	169
75	1	308996	938995	747182	692768	076
76	1	326450	231515	690478	462004	984
77	1	343903	524035	633774	231241	892
78	1	361356	816555	577070	000478	800
79	1	378810	109075	520365	769715	707
80	1	396263	401595	463661	538952	615
81	1	413716	694115	406957	308189	523
82	1	431169	986635	350253	077426	430
83	1	448623	279155	293548	846663	338
84	1	466076	571675	236844	615900	246
85	1	483529	864195	180140	385137	153
86	1	500983	156715	123436	154374	061
87	1	518436	449235	066731	923610	969
88	1	535889	741755	010027	692847	876
89	1	553343	034274	953323	462084	784
90	1	570796	326794	896619	231321	692
91	1	588249	619314	839915	000558	599
92	1	605702	911834	783210	769795	507
93	1	623156	204354	726506	539032	415
94	1	640609	496874	669802	308269	322
95	1	658062	789394	613098	077506	230
96	1	675516	081914	556393	846743	138
97	1	692969	374434	499689	615980	046
98	1	710422	666954	442985	385216	953
99	1	727875	959474	386281	154453	861
100	1	745329	251994	329576	923690	769
120	2	094395	102393	195492	308428	922
150	2	617993	877991	494365	385536	153
180	3	141592	653589	793238	462643	383
210	3	665191	429188	092111	539750	614
240	4	188790	204786	390984	616857	844
270	4	712388	980384	689857	693965	075
330	5	759586	531581	287603	848179	536
360	6	283185	307179	586476	925286	767

TAB. XXIII.

1	...290	888208	665721	596153	948
2	...581	776417	331443	192307	897
3	...872	664625	997164	788461	845
4	..1163	552834	662886	284615	794
5	..1454	441043	328607	980769	742
6	..1745	329251	994329	576923	691
7	..2036	217460	660051	173077	639
8	..2327	105669	325772	769231	588
9	..2617	993877	991494	365385	536
10	..2908	882086	657215	961539	485
20	..5817	764173	314431	923078	969
30	..8726	646259	971647	884618	454
40	.11635	528346	628863	846157	938
50	.14544	410433	286079	807697	433
60	.17453	292519	943295	769236	908

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1	4	848136	811095	359935	899
2	9	696273	622190	719871	798
3	14	544410	433286	079807	694
4	19	392547	244381	439743	597
5	24	240684	055476	799679	496
6	29	088820	866572	159615	395
7	33	936957	677667	519551	294
8	38	785094	488762	879487	193
9	43	633231	299858	239423	092
10	48	481368	110953	599358	991
20	96	962736	221907	198717	983
30	...145	444104	332860	798076	974
40	...193	925472	443814	397435	966
50	...242	406840	554767	996794	957
60	...290	888208	665721	596153	948

TAB. XXIV.

$$\varphi = (2^\circ.\ 46'.\ 40''.)\ m = 10000''.\ m$$

φ =	0 048481	368110	9536.	m
φ^2 =	...2350	443053	9098.	m^2
φ^3 =	... 113	952694	9204.	m^3
φ^4 =	5	524582	5497.	m^4
φ^5 =	....	267839	3202	m^5
φ^6 =	....	.12985	2167	m^6
φ^7 =	....	.. 629	5411	m^7
φ^8 =	....	... 30	5210	m^8
φ^9 =	....	 1	4797	m^9
φ^{10} =	....	......	.717	m^{10}
φ^{11} =	....	......	..35	m^{11}
φ^{12} =	....	......	.. 2	m^{12}

---

fin. φ =	0 048481	368110	953599.	m
—	18	992115	820072.	m^3
+	....	..2231	994335.	m^5
—	....	......	124901.	m^7
+	....	......	.....4.	m^9

---

cof. φ =	1 000000	000000	000000	
—	...1175	221526	954894.	m^2
+	....	230190	939569.	m^4
—	....	.. 180	350232	m^6
+	....	....	.. 757.	m^8

TAB. XXIV.

$\pi = 3 +$

141592	653589	793238	462643	383279
502884	197169	399375	105820	974944
592307	816406	286208	998628	034825
342117	067982	148086	513272	306647
093844	6 +			

$\log. \pi = 0{,}497149$	872694	133854	351268
$10^2. \log. 1^\circ = 0{,}241877$	367590	827784	547474
$10^4. \log. 1' = 0{,}463726$	117207	184152	038707
$10^6. \log. 1'' = 0{,}685574$	866823	540519	529940

$$\text{Arc.} = 1 = 57^{\circ}.\ 17^{\mathrm{I}}.\ 44^{\mathrm{II}}.\ 48^{\mathrm{III}}.\ 22^{\mathrm{IV}}.\ 29^{\mathrm{V}}.\ 21^{\mathrm{VI}}.\ \&c.$$

$$\frac{1}{\pi} = 0{,}318309 \quad 886183 \quad 790671 \quad 53 +$$

$$\sqrt{\pi} = 1{,}772453{,}85075\ \&c.$$

$$\sqrt[3]{\frac{\pi}{6}} = 0{,}523598{,}775008{,}234820\ ,\ \&c.$$

$$\varphi = \frac{3\ \text{ſin.}\ \varphi}{2 + \text{coſ.}\ \varphi} \ast - \frac{1}{60}\varphi^5 - \&c.$$

$$\varphi = \left(\frac{60 - 17\ \text{ſin.}\ \varphi^2}{60 - 27\ \text{ſin.}\ \varphi^2}\right) \text{ſin.}\ \varphi \ast\ast + \frac{61}{5000} \int \varphi^7,\ \&c.$$

$$\varphi = \frac{28 \int \varphi + \text{ſin.}\ 2\psi}{18 + 12\ \text{coſ.}\ \varphi} \ast\ast + \frac{1}{2100}\varphi^7 + \&c.$$

$$\tfrac{1}{2}\varphi = \int\varphi - \tfrac{1}{2}\int 2\varphi + \tfrac{1}{3}\int 3\varphi - \tfrac{1}{4}\int 4\varphi + \tfrac{1}{5}\int 5\varphi\ \&c.$$

$$\frac{1}{\varphi} = \text{cot.}\ \varphi + \tfrac{1}{2}\, t\frac{\varphi}{2} + \tfrac{1}{4}\, t\frac{\varphi}{4} + \tfrac{1}{8}\, t\frac{\varphi}{8} + \frac{1}{16}\, t\frac{\varphi}{16} + \&c.$$

TAB XXV.

Gr.	1.	2.	3.	4.
1	..1745	..3490	..5236	..6981
2	..3490	..6980	.10470	.13960
3	..5234	.10467	.15701	.20934
4	..6976	.13951	.20927	.27903
5	..8716	.17431	.26147	.34862
6	.10453	.20906	.31359	.41811
7	.12187	.24374	.36561	.48748
8	.13917	.27835	.41752	.55669
9	.15643	.31287	.46930	.62574
10	.17365	.34730	.52094	.69459
11	.19081	.38162	.57243	.76324
12	.20791	.41582	.62374	.83165
13	.22495	.44990	.67485	.89980
14	.24192	.48384	.72577	.96769
15	.25882	.51764	.77646	103528
16	.27564	.55128	.82691	110255
17	.29237	.58474	.87712	116949
18	.30902	.61803	.92705	123607
19	.32557	.65114	.97670	130227
20	.34202	.68404	102606	136808
21	.35837	.71674	107510	143347
22	.37461	.74921	112382	149843
23	.39073	.78146	117219	156292
24	.40674	.81347	122021	162695
25	.42262	.84524	126785	169047
26	.43837	.87674	131511	175348
27	.45399	.90798	136197	181596
28	.46947	.93894	140841	187789
29	.48481	.96962	145443	193924
30	.50000	100000	150000	200000

TAB. XXV.

5.	6.	7.	8.	9.
. . 8726	. 10471	. 12217	. 13962	. 15707
. 17450	. 20940	. 24430	. 27920	. 31410
. 26168	. 31402	. 36635	. 41869	. 47102
. 34878	. 41854	. 48830	. 55805	. 62781
. 43578	. 52293	. 61009	. 69725	. 78440
. 52264	. 62717	. 73170	. 83623	. 94076
. 60935	. 73122	. 85309	. 97495	109682
. 69587	. 83504	. 97421	111338	125256
. 78217	. 93861	109504	125148	140791
.86824	104189	121554	138919	156283
. 95405	114485	133566	152647	171728
103956	124747	145538	166329	187121
112476	134971	157466	179961	202456
120961	145153	169345	193538	217730
129409	155291	181173	207055	232937
137819	165382	192946	220510	248074
146186	175423	204660	233897	263135
154508	185410	216312	247214	278115
162784	195341	227898	260455	293011
171010	205212	239414	273616	307818
179184	215021	250858	286694	322531
187303	224764	262224	299685	337146
195366	234439	273512	312585	351658
203368	244042	284716	325389	366063
211309	253571	295833	338095	380356
219186	263023	306860	350697	394534
226995	272394	317793	363192	408591
234736	281683	328630	375577	422524
242405	290886	339367	387848	436329
250000	300000	350000	400000	450000

TAB. XXV.

Gr.	1.	2.	3.	4.
31	.51504	103008	154511	206015
32	.52992	105984	158976	211968
33	.54464	108928	163392	217856
34	.55919	111839	167758	223677
35	.57358	114715	172073	229431
36	.58779	117557	176336	235114
37	.60181	120363	180544	240726
38	.61566	123132	184698	246265
39	.62932	125864	188796	251728
40	.64279	128558	192836	257115
41	.65606	131212	196818	262424
42	.66913	133826	200739	267652
43	.68200	136400	204600	272799
44	.69466	138932	208398	277863
45	.70711	141421	212132	282843
46	.71934	143868	215802	287736
47	.73135	146271	219406	292541
48	.74314	148629	222943	297258
49	.75471	150942	226413	301884
50	.76604	153209	229813	306418
51	.77715	155429	233144	310858
52	.78801	157602	236403	315204
53	.79864	159727	239591	319454
54	.80902	161803	242705	323607
55	.81915	163830	245746	327661
56	.82904	165808	248711	331615
57	.83867	167734	251601	335468
58	.84805	169610	254414	339219
59	.85717	171433	257150	342867
60	.86603	173205	259808	346410

TAB. XXV.

5.	6.	7.	8.	9.
257519	309023	360527	412030	463534
264960	317952	370944	423935	476927
272320	326783	381247	435711	490175
279597	335516	391435	447355	503274
286788	344146	401503	458861	516219
293893	352671	411450	470228	529007
300905	361089	421270	481452	541633
307831	369397	430963	492529	554095
314660	377592	440524	503456	566388
321394	385673	449951	514230	578509
328030	393635	459241	524847	590453
334565	401478	468391	535304	602216
340999	409199	477399	545599	613799
347329	416795	486261	555727	625193
353553	424264	494975	565685	636396
359670	431604	503538	575472	647406
365677	438812	511948	585083	658218
371572	445887	520201	594516	668830
377355	452826	528297	603768	679239
383022	459627	536231	612836	689440
388573	466288	544002	621717	699431
394005	472806	551607	630409	709210
399318	479181	559045	638908	718772
404508	485410	566312	647214	728115
409576	491491	573406	655322	737237
414519	497423	580326	663230	746134
419335	503202	587069	670936	754804
424024	508828	593634	678438	763243
428584	514300	600017	685734	771451
433013	519615	606218	692820	779423

TAB. XXV.

Gr.		1.	2.	3.	4.
61		.87462	174924	262386	349848
62		.88295	176589	264884	353179
63		.89101	178201	267302	356403
64		.89879	179759	269638	359518
65		.90631	181262	271892	362523
66		.91355	182709	274064	365418
67		.92050	184101	276151	368202
68		.92718	185437	278155	370874
69		.93358	186716	280074	373432
70		.93969	187939	281908	375877
71		.94552	189104	283655	378207
72		.95106	190211	285317	380423
73		.95630	191261	286891	382522
74		.96126	192252	288379	384505
75		.96593	193185	289778	386370
76		.97030	194059	291089	388118
77		.97437	194874	292311	389748
78		.97815	195630	293444	391259
79		.98163	196325	294488	392651
80		.98481	196962	295442	393923
81		.98769	197537	296306	395075
82		.99027	198054	297080	396107
83		.99255	198509	297764	397018
84		.99452	198904	298357	397809
85		.99619	199239	298858	398478
86		.99756	199513	299269	399026
87		.99863	199726	299589	399452
88		.99939	199878	299817	399756
89		.99985	199969	299954	399939
90		100000	200000	300000	400000

TAB. XXV.

5	6.	7.	8.	9.
437310	524772	612234	699696	787158
441473	529768	618063	706358	794652
445503	534604	623705	712805	801906
449397	539276	629156	719035	808915
453154	543785	634415	725046	815677
456773	548127	639482	730836	822191
460252	552303	644353	736404	828454
463592	556311	649029	741748	834466
466790	560148	653506	746864	840222
469846	563816	657785	751754	845723
472759	567311	661863	756415	850967
475528	570634	665740	760845	855951
478152	573783	669413	765044	860674
480631	576757	672883	769009	865136
482963	579555	676148	772741	869333
485148	582177	679207	776237	873266
487185	584622	682059	779496	876933
489074	586889	684703	782518	880333
490814	588976	687139	785302	883464
492404	590885	689365	787846	886327
493844	592613	691382	790151	888919
495134	594161	693188	792214	891241
496273	595528	694782	794037	893292
497261	596713	696165	795617	895070
498097	597717	697336	796956	896575
498782	598538	698295	798051	897808
499315	599178	699041	798904	898767
499695	599634	699574	799513	899452
499924	599909	699893	799878	899863
500000	600000	700000	800000	900000

TAB. XXVI.

Gr.	Sinus.	Tangens.	Secans.	Log. Sin.	Log. Tang.
1	174524	174551	10001523	8.2418553	8.2419215
2	348995	349208	10006095	8.5428192	8.5430838
3	523360	524078	10013723	8.7188002	8.7193958
4	697565	699268	10024419	8.8435845	8.8446437
5	871557	874887	10038198	8.9402960	8.9419518
6	1045285	1051042	10055082	9.0192346	9.0216202
7	1218693	1227846	10075099	9.0858945	9.0891438
8	1391731	1405408	10098276	9.1435553	9.1478025
9	1564345	1583844	10124651	9.1943324	9.1997125
10	1736482	1763270	10154267	9.2396702	9.2463188
11	1908090	1943803	10187168	9.2805988	9.2886523
12	2079117	2125565	10223407	9.3178789	9.3274745
13	2249511	2308682	10263039	9.3520880	9.3633641
14	2419219	2493280	10301635	9.3836752	9.3967711
15	2588190	2679492	10352762	9.4129962	9.4280525
16	2756374	2867454	10402994	9.4403381	9.4574964
17	2923717	3057307	10456918	9.4659353	9.4853390
18	3090170	3249197	10514622	9.4899824	9.5117760
19	3255682	3443276	10576207	9.5126419	9.5369718
20	3420202	3639702	10641778	9.5340517	9.5610658
21	3583679	3838640	10711450	9.5543292	9.5841774
22	3746066	4040262	10785347	9.5735754	9.6064096
23	3907311	4244749	10863604	9.5918780	9.6278519
24	4067366	4452287	10946363	9.6093133	9.6485831
25	4226183	4663077	11033779	9.6259483	9.6686725
26	4383712	4877326	11126019	9.6418420	9.6881818
27	4539905	5095254	11223262	9.6570468	9.7071659
28	4694716	5317094	11325701	9.6716093	9.7256744
29	4848096	5543090	11433541	9.6855712	9.7437520
30	5000000	5773503	11547005	9.6989700	9.7614394

TAB. XXVI.

Gr.	Sinus.	Tangens.	Secans.	Log. Sin.	Log. Tang.
31	5150381	6008606	11666334	9.7118393	9.7787737
32	5299193	6248694	11791784	9.7242097	9.7957892
33	5446390	6494076	11923633	9.7361088	9.8125174
34	5591929	6745085	12062180	9.7475617	9.8289874
35	5735764	7002075	12207746	9.7585913	9.8452268
36	5877853	7265426	12360680	9.7692187	9.8612610
37	6018150	7535540	12521357	9.7794630	9.8771144
38	6156615	7812856	12690182	9.7893420	9.8928098
39	6293204	8097840	12867596	9.7988718	9.9083692
40	6427876	8390996	13054073	9.8080675	9.9238135
41	6560590	8692868	13250130	9.8169429	9.9391631
42	6691306	9004041	13456327	9.8255109	9.9544374
43	6819984	9325151	13673275	9.8337833	9.9696559
44	6946584	9656888	13901636	9.8417713	9.9848372
45	7071068	10000000	14142136	9.8494850	10.0000000
46	7193398	10355303	14395565	9.8569341	10.0151628
47	7313537	10723687	14662792	9.8641275	10.0303441
48	7431448	11106125	14944765	9.8710735	10.0455626
49	7547096	11503684	15242531	9.8777799	10.0608369
50	7660444	11917536	15557238	9.8842540	10.0761865
51	7771460	12348972	15890157	9.8905026	10.0916308
52	7880107	12799416	16242692	9.8965321	10.1071902
53	7986355	13270448	16616401	9.9023486	10.1228856
54	8090170	13763819	17013016	9.9079576	10.1387390
55	8191521	14281480	17434468	9.9133645	10.1547732
56	8290376	14825610	17882916	9.9185742	10.1710126
57	8386706	15398650	18360784	9.9235914	10.1874826
58	8480481	16003345	18870799	9.9284205	10.2042108
59	8571673	16642795	19416040	9.9330656	10.2212263
60	8660254	17320508	20000000	9.9375306	10.2385606

TAB. XXVI.

Gr.	Sinus.	Tangens.	Secans.	Log. Sin.	Log. Tang.
61	8746197	18040478	20626653	9.9418193	10.2562480
62	8829470	18807265	21300545	9.9459349	10.2743256
63	8910065	19626105	22026893	9.9498809	10.2928341
64	8987940	20503038	22811720	9.9536602	10.3118182
65	9063078	21445069	23662016	9.9572757	10.3313275
66	9135454	22460368	24585933	9.9607302	10.3514169
67	9205049	23558524	25593047	9.9640261	10.3721481
68	9271839	24750869	26694672	9.9671659	10.3935904
69	9335804	26050891	27904281	9.9701517	10.4158226
70	9396926	27474774	29238044	9.9729858	10.4389341
71	9455185	29042109	30715535	9.9756701	10.4630281
72	9510565	30776835	32360680	9.9782063	10.4882240
73	9563048	32708526	34203036	9.9805963	10.5146610
74	9612617	34874144	36279553	9.9828416	10.5425036
75	9659258	37320508	38637033	9.9849438	10.5719475
76	9702957	40107809	41335655	9.9869041	10.6032289
77	9743701	43314759	44454115	9.9887239	10.6366359
78	9781476	47046301	48097343	9.9904044	10.6725255
79	9816271	51445540	52408431	9.9919466	10.7113477
80	9848077	56712818	57587705	9.9933515	10.7536812
81	9876883	63137515	63924532	9.9946199	10.8002875
82	9902680	71153697	71852965	9.9957528	10.8521975
83	9925462	81443464	82055090	9.9967507	10.9108562
84	9945218	95143645	95667722	9.9976143	10.9783798
85	9961947	114300523	114737~~31~~2 13	9.9983442	11.0580482
86	9975640	143006663	143355870	9.9989408	11.1553563
87	9986295	190811367	191073226	9.9994044	11.2809042
88	9993908	286362533	286537083	9.9997354	11.4569162
89	9998477	572899617	572986885	9.9999338	11.7580785
90	10000000	infinit.	infinit.	10.0000000	infinit.

TAB. XXVII.

$$0 = x^n + a\, x^{n-1} + b\, x^{n-2} + c\, x^{n-3} + \&c.$$

$$x' = \frac{(n-1)\,y^n + a(n-2)\,y^{n-1} + b\,(n-3)y^{n-2} + \&c.}{n\,y^{n-1} + a(n-1)\,y^{n-2} + b\,(n-2)y^{n-3} + \&c.}$$

$$0 = x^2 + a\,x + b$$

$$x' = \frac{y^2 - b}{2y + a}$$

$$0 = x^3 + a\,x^2 + b\,x + c$$

$$x' = \frac{2\,y^3 + a\,y^2 - c}{3\,y^2 + 2\,a\,y + b}$$

$$0 = x^4 + a\,x^3 + b\,x^2 + c\,x + d$$

$$x' = \frac{3\,y^4 + 2\,a\,y^3 + b\,y^2 - d}{4y^3 + 3\,a\,y^2 + b\,y + c}$$

$$0 = x^5 + a\,x^4 + b\,x^3 + c\,x^2 + d\,x + e$$

$$x' = \frac{4y^5 + 3\,a\,y^4 + 2\,b\,y^3 + c\,y^2 - e}{5y^4 + 4\,a\,y^3 + 3\,b\,y^2 + 2\,cy + d}$$

$$0 = x^n - a\,x^{n-1} + b\,x^{n-2} \;.\;.\;.\;.\;.\; \pm k\,x^2 \mp l\,x \pm m$$

$x \;.\;.\;.\;.\; m^{1:n}$

$.\;.\;.\;.\; \left(\frac{l}{n}\right)^{1:(n-1)}$

$.\;.\;.\;.\; \left(\frac{2\,k}{n.(n-1)}\right)^{1:n-2}$

&c.

$.\;.\;.\;.\; \left(\frac{2\,b}{n\,(n-1)}\right)^{1:2}$

$.\;.\;.\;.\; \left(\frac{a}{n}\right)$

TAB. XXVIII.

$$x - x^3 = a$$

Utraque radix minor poſitiva, major negativa.

$$x^3 - x = a$$

Utraque radix minor negativa, major poſitiva.

Exemplum.

$$z = 2 \text{ ſin. } 10^\circ$$
$$z^3 = 3z - 1$$
$$z = x\sqrt{3}.$$
$$x - x^3 = 0,1924501 = a.$$

x	a	diff. I.	diff. II.
		Δ	Δ Δ
0, 200	0.1920000		
0, 201	0.1928794	0,0008794	
0, 202	0.1937576	0,0008782	— 0,0000012

$$1920000 + (\Delta - \tfrac{1}{2}\Delta\Delta)\, n - \tfrac{1}{2}\Delta\Delta .\, n^2 = 1924501$$
$$1920000 + 8800\; n - 6\; n^2 = 1924501$$
$$n = \frac{4501}{8800 - 6\,n} = 5118$$
$$x = 0,2005118$$

x	a	diff. I.	diff. II.
		Δ	ΔΔ
0.885	0.1918459		
0.884	0.1931929	+ 13470	
0.883	0.1945346	+ 13417	— 43

$$1918459 + 13491\tfrac{1}{2}.\, n - 21\tfrac{1}{2}.\, n\, n - 1924501$$
$$n = \frac{6042}{13491,5 - 21,5\; n} = 4477$$
$$x = 0,8850000 - 0,0004477 = 0,8845523.$$

x	a	diff. I.	diff. II.
		Δ	ΔΔ
1.085	0.1922891		
1.086	0.1948241	+ 25350	
1.087	0.1973655	+ 25414	+ 64.

$$n = \frac{1610}{25318 + 32\; n} = 0,0626$$
$$- x = 1,0850636.$$

TAB. XXIX.

x	a	x	a	x	a
0.000	0.0000000	0.035	0.0349571	0.070	0.0696570
0.001	0.0010000	0.036	0.0359533	0.071	0.0706421
0.002	0.0020000	0.037	0.0369493	0.072	0.0716268
0.003	0.0030000	0.038	0.0379452	0.073	0.0726110
0.004	0.0039999	0.039	0.0389407	0.074	0.0735948
0.005	0.0049999	0.040	0.0399360	0.075	0.0745781
0.006	0.0059998	0.041	0.0409311	0.076	0.0755610
0.007	0.0069997	0.042	0.0419259	0.077	0.0765435
0.008	0.0079995	0.043	0.0429205	0.078	0.0775254
0.009	0.0089993	0.044	0.0439148	0.079	0.0785070
0.010	0.0099990	0.045	0.0449089	0.080	0.0794880
0.011	0.0109987	0.046	0.0459027	0.081	0.0804686
0.012	0.0119983	0.047	0.0468962	0.082	0.0814486
0.013	0.0129978	0.048	0.0478894	0.083	0.0824282
0.014	0.0139973	0.049	0.0488823	0.084	0.0834073
0.015	0.0149966	0.050	0.0498750	0.085	0.0843859
0.016	0.0159959	0.051	0.0508673	0.086	0.0853639
0.017	0.0169951	0.052	0.0518594	0.087	0.0863414
0.018	0.0179942	0.053	0.0528511	0.088	0.0873185
0.019	0.0189931	0.054	0.0538425	0.089	0.0882950
0.020	0.0199920	0.055	0.0548336	0.090	0.0892710
0.021	0.0209907	0.056	0.0558244	0.091	0.0902464
0.022	0.0219894	0.057	0.0568148	0.092	0.0912213
0.023	0.0229878	0.058	0.0578049	0.093	0.0921956
0.024	0.0239862	0.059	0.0587946	0.094	0.0931694
0.025	0.0249844	0.060	0.0597840	0.095	0.0941426
0.026	0.0259824	0.061	0.0607730	0.096	0.0951152
0.027	0.0269803	0.062	0.0617617	0.097	0.0960873
0.028	0.0279780	0.063	0.0627500	0.098	0.0970588
0.029	0.0289756	0.064	0.0637379	0.099	0.0980297
0.030	0.0299730	0.065	0.0647254	0.100	0.0990000
0.031	0.0309702	0.066	0.0657125	0.101	0.0999697
0.032	0.0319672	0.067	0.0666992	0.102	0.1009388
0.033	0.0329641	0.068	0.0676856	0.103	0.1019073
0.034	0.0339607	0.069	0.0686715	0.104	0.1028751
0.035	0.0349571	0.070	0.0696570	0.105	0.1038424

TAB. XXIX.

x	*a*	*x*	*a*	*x*	*a*
0.105	0.1038424	0.140	0.1372560	0.175	0.1696406
0.106	0.1048090	0.141	0.1381968	0.176	0.1705482
0.107	0.1057750	0.142	0.1391367	0.177	0.1714548
0.108	0.1067403	0.143	0.1400758	0.178	0.1723602
0.109	0.1077050	0.144	0.1410140	0.179	0.1732647
0.110	0.1086690	0.145	0.1419513	0.180	0.1741680
0.111	0.1096324	0.146	0.1428879	0.181	0.1750703
0.112	0.1105951	0.147	0.1438235	0.182	0.1759714
0.113	0.1115571	0.148	0.1447582	0.183	0.1768715
0.114	0.1125185	0.149	0.1456921	0.184	0.1777705
0.115	0.1134791	0.150	0.1466250	0.185	0.1786684
0.116	0.1144391	0.151	0.1475570	0.186	0.1795651
0.117	0.1153984	0.152	0.1484882	0.187	0.1804608
0.118	0.1163570	0.153	0.1494184	0.188	0.1813553
0.119	0.1173148	0.154	0.1503477	0.189	0.1822487
0.120	0.1182720	0.155	0.1512761	0.190	0.1831410
0.121	0.1192284	0.156	0.1522036	0.191	0.1840321
0.122	0.1201842	0.157	0.1531301	0.192	0.1849221
0.123	0.1211391	0.158	0.1540557	0.193	0.1858109
0.124	0.1220934	0.159	0.1549803	0.194	0.1866986
0.125	0.1230469	0.160	0.1559040	0.195	0.1875851
0.126	0.1239996	0.161	0.1568267	0.196	0.1884705
0.127	0.1249516	0.162	0.1577485	0.197	0.1893546
0.128	0.1259028	0.163	0.1586693	0.198	0.1902376
0.129	0.1268533	0.164	0.1595891	0.199	0.1911194
0.130	0.1278030	0.165	0.1605078	0.200	0.1920000
0.131	0.1287519	0.166	0.1614257	0.201	0.1928794
0.132	0.1297000	0.167	0.1623425	0.202	0.1937576
0.133	0.1206474	0.168	0.1632584	0.203	0.1946346
0.134	0.1315939	0.169	0.1641732	0.204	0.1955103
0.135	0.1325396	0.170	0.1650870	0.205	0.1963849
0.136	0.1334845	0.171	0.1659998	0.206	0.1972581
0.137	0.1344286	0.172	0.1669116	0.207	0.1981303
0.138	0.1353719	0.173	0.1678223	0.208	0.1990011
0.139	0.1363144	0.174	0.1687314	0.209	0.1998707
0.140	0.1372560	0.175	0.1696406	0.210	0.2007390

TAB. XXIX.

x	a	x	a	x	a
0.210	0.2007390	0.245	0.2302939	0.280	0.2580480
0.211	0.2016061	0.246	0.2311131	0.281	0.2588120
0.212	0.2024719	0.247	0.2319308	0.282	0.2595742
0.213	0.2033364	0.248	0.2327470	0.283	0.2603348
0.214	0.2041997	0.249	0.2335618	0.284	0.2610937
0.215	0.2050616	0.250	0.2343750	0.285	0.2618509
0.216	0.2059223	0.251	0.2351867	0.286	0.2626063
0.217	0.2067816	0.252	0.2359970	0.287	0.2633601
0.218	0.2076398	0.253	0.2368057	0.288	0.2641121
0.219	0.2084965	0.254	0.2376129	0.289	0.2648624
0.220	0.2093520	0.255	0.2384186	0.290	0.2656110
0.221	0.2102061	0.256	0.2392228	0.291	0.2663578
0.222	0.2110590	0.557	0.2400254	0.292	0.2671029
0.223	0.2119104	0.258	0.2408265	0.293	0.2678462
0.224	0.2127606	0.259	0.2416260	0.294	0.2685878
0.225	0.2136094	0.260	0.2424240	0.295	0.2693276
0.226	0.2144568	0.261	0.2432204	0.296	0.2700657
0.227	0.2153020	0.262	0.2440153	0.297	0.2708019
0.228	0.2161476	0.263	0.2448086	0.298	0.2715364
0.229	0.2169919	0.264	0.2456003	0.299	0.2722601
0.230	0.2178330	0.265	0.2463904	0.300	0.2730000
0.231	0.2186736	0.266	0.2471789	0.301	0.2737291
0.232	0.2195128	0.267	0.2479658	0.302	0.2744564
0.233	0.2203507	0.268	0.2487512	0.303	0.2751819
0.234	0.2211871	0.269	0.2495349	0.304	0.2759055
0.235	0.2220221	0.270	0.2503170	0.305	0.2766274
0.236	0.2228557	0.271	0.2510975	0.306	0.2773474
0.237	0.2236879	0.272	0.2518764	0.307	0.2780666
0.238	0.2245187	0.273	0.2526536	0.308	0.2787819
0.239	0.2253481	0.274	0.2534292	0.309	0.2794964
0.240	0.2261760	0.275	0.2542031	0.310	0.2802090
0.241	0.2270025	0.276	0.2549754	0.311	0.2809198
0.242	0.2278275	0.277	0.2557461	0.312	0.2816287
0.243	0.2286511	0.278	0.2565150	0.313	0.2823357
0.244	0.2294732	0.279	0.2572824	0.314	0.2830409
0.245	0.2302939	0.280	0.2580480	0.315	0.2837441

TAB. XXIX.

x	a	x	a	x	a
0.315	0.2837441	0.350	0.3071250	0.385	0.3279334
0.316	0.2844455	0.351	0.3077564	0.386	0.3284875
0.317	0.2851450	0.352	0.3083858	0.387	0.3290394
0.318	0.2858426	0.353	0.3090130	0.388	0.3295889
0.319	0.2865382	0.354	0.3096381	0.389	0.3301361
0.320	0.2872320	0.355	0.3102611	0.390	0.3306810
0.321	0.2879238	0.356	0.3108820	0.391	0.3312235
0.322	0.2886138	0.357	0.3115007	0.392	0.3317637
0.323	0.2893017	0.358	0.3121173	0.393	0.3323015
0.324	0.2899878	0.359	0.3127317	0.394	0.3328370
0.325	0.2906719	0.360	0.3133440	0.395	0.3333701
0.326	0.2913540	0.361	0.3139541	0.396	0.3339009
0.327	0.2920340	0.362	0.3145620	0.397	0.3344292
0.328	0.2927124	0.363	0.3151679	0.398	0.3349552
0.329	0.2933887	0.364	0.3157715	0.399	0.3354788
0.330	0.2940630	0.365	0.3163728	0.400	0.3360000
0.331	0.2947353	0.366	0.3169721	0.401	0.3365188
0.332	0.2954056	0.367	0.3175691	0.402	0.3370352
0.333	0.2960740	0.368	0.3181640	0.403	0.3375492
0.334	0.2957403	0.369	0.3187566	0.404	0.3380607
0.335	0.2974046	0.370	0.3193470	0.405	0.3385699
0.336	0.2980669	0.371	0.3199352	0.406	0.3390766
0.337	0.2987273	0.372	0.3205212	0.407	0.3395809
0.338	0.2993855	0.373	0.3211049	0.408	0.3400827
0.339	0.3000418	0.374	0.3216864	0.409	0.3405821
0.340	0.3006960	0.375	0.3222656	0.410	0.3410790
0.341	0.3013482	0.376	0.3228426	0.411	0.3415735
0.342	0.3019983	0.377	0.3234174	0.412	0.3420655
0.343	0.3026464	0.378	0.3239898	0.413	0.3425550
0.344	0.3032924	0.379	0.3245601	0.414	0.3430421
0.345	0.3039364	0.380	0.3251280	0.415	0.3435266
0.346	0.3045783	0.381	0.3256937	0.416	0.3440087
0.347	0.3052180	0.382	0.3262570	0.417	0.3444883
0.348	0.3058558	0.383	0.3268181	0.418	0.3449654
0.349	0.3064915	0.384	0.3273769	0.419	0.3454399
0.350	0.3071250	0.385	0.3279334	0.420	0.3459120

TAB. XXIX.

x	a	x	a	x	a
0.420	0.3459120	0.455	0.3608036	0.490	0.3723510
0.421	0.3463815	0.456	0.3611812	0.491	0.3726292
0.422	0.3468485	0.457	0.3615560	0.492	0.3729045
0.423	0.3473130	0.458	0.3619281	0.493	0.3731768
0.424	0.3477750	0.459	0.3622974	0.494	0.3734462
0.425	0.3482344	0.460	0.3626640	0.495	0.3737126
0.426	0.3486912	0.461	0.3630278	0.496	0.3739760
0.427	0.3491455	0.462	0.3633889	0.497	0.3742765
0.428	0.3495972	0.463	0.3637472	0.498	0.3744940
0.429	0.3500464	0.464	0.3641027	0.499	0.3747485
0.430	0.3504930	0.465	0.3644554	0.500	0.3750000
0.431	0.3509370	0.466	0.3648053	0.501	0.3752485
0.432	0.3513784	0.467	0.3651584	0.502	0.3754940
0.433	0.3518173	0.468	0.3654968	0.503	0.3757365
0.434	0.3522535	0.469	0.3658383	0.504	0.3759759
0.435	0.3526871	0.470	0.3661770	0.505	0.3762124
0.436	0.3531181	0.471	0.3665129	0.506	0.3764458
0.437	0.3535465	0.472	0.3668460	0.507	0.3766762
0.438	0.3539723	0.473	0.3671741	0.508	0.3769035
0.439	0.3543955	0.474	0.3675036	0.509	0.3771278
0.440	0.3548160	0.475	0.3678281	0.510	0.3773490
0.441	0.3552339	0.476	0.3681498	0.511	0.3775672
0.442	0.3554911	0.477	0.3684687	0.512	0.3777823
0.443	0.3560617	0.478	0.3687846	0.513	0.3779943
0.444	0.3564716	0.479	0.3690978	0.514	0.3782033
0.445	0.3568789	0.480	0.3694080	0.515	0.3784091
0.446	0.3572835	0.481	0.3697154	0.516	0.3786119
0.447	0.3576854	0.482	0.3700198	0.517	0.3788115
0.448	0.3580846	0.483	0.3703214	0.518	0.3790081
0.449	0.3584811	0.484	0.3706201	0.519	0.3792016
0.450	0.3588750	0.485	0.3709159	0.520	0.3793920
0.451	0.3592661	0.486	0.3712087	0.521	0.3795792
0.452	0.3596546	0.487	0.3714987	0.522	0.3797634
0.453	0.3600603	0.488	0.3717857	0.523	0.3799443
0.454	0.3604233	0.489	0.3720698	0.524	0.3801222
0.455	0.3608036	0.490	0.3723510	0.525	0.3802969

TAB. XXIX.

x	a	x	a	x	a
0.525	0.3802969	0.560	0.3843840	0.595	0.3843551
0.526	0.3804684	0.561	0.3844415	0.596	0.3842913
0.527	0.3806368	0.562	0.3844957	0.597	0.3842238
0.528	0.3808020	0.563	0.3845465	0.598	0.3841528
0.529	0.3809641	0.564	0.3845938	0.599	0.3840782
0.530	0.3811230	0.565	0.3846379	0.600	0.3840000
0.531	0.3812787	0.566	0.3846785	0.601	0.3839182
0.532	0.3814312	0.567	0.3847157	0.602	0.3838328
0.533	0.3815805	0.568	0.3847496	0.603	0.3837438
0.534	0.3817267	0.569	0.3847800	0.604	0.3836511
0.535	0.3818696	0.570	0.3848070	0.605	0.3835549
0.536	0.3820093	0.571	0.3848306	0.606	0.3834550
0.537	0.3821458	0.572	0.3848508	0.607	0.3833515
0.538	0.3822791	0.573	0.3848675	0.608	0.3832443
0.539	0.3824092	0.574	0.3848808	0.609	0.3831335
0.540	0.3825360	0.575	0.3848906	0.610	0.3830190
0.541	0.3826596	0.576	0.3848970	0.611	0.3829009
0.542	0.3827799	0.577	0.3849000	0.612	0.3827791
0.543	0.3828970	0.578	0.3848994	0.613	0.3826536
0.544	0.3830108	0.579	0.3848955	0.614	0.3825245
0.545	0.3831214	0.580	0.3848880	0.615	0.3823916
0.546	0.3832287	0.581	0.3848771	0.616	0.3822551
0.547	0.3833327	0.582	0.3848626	0.617	0.3821149
0.548	0.3834334	0.583	0.3848447	0.618	0.3819710
0.549	0.3835309	0.584	0.3848233	0.619	0.3818233
0.550	0.3836250	0.585	0.3847984	0.620	0.3816720
0.551	0.3837158	0.586	0.3847699	0.621	0.3815149
0.552	0.3838034	0.587	0.3847380	0.622	0.3813582
0.553	0.3838876	0.588	0.3847025	0.623	0.3811956
0.554	0.3839685	0.589	0.3846635	0.624	0.3810294
0.555	0.3840461	0.590	0.3846210	0.625	0.3808594
0.556	0.3841204	0.591	0.3845749	0.626	0.3806856
0.557	0.3841913	0.592	0.3845253	0.627	0.3805081
0.558	0.3842589	0.593	0.3844721	0.628	0.3803268
0.559	0.3843231	0.594	0.3844154	0.629	0.3801418
0.560	0.3843840	0.595	0.3843551	0.630	0.3799530

TAB. XXIX.

x	a	x	a	x	a
0.630	0.3799530	0.665	0.3709204	0.700	0.3570000
0.631	0.3797604	0.666	0.3705917	0.701	0.3565279
0.632	0.3795640	0.667	0.3702590	0.702	0.3560516
0.633	0.3793639	0.668	0.3699224	0.703	0.3555711
0.634	0.3791599	0.669	0.3695817	0.704	0.3550863
0.635	0.3789521	0.670	0.3692370	0.705	0.3545974
0.636	0.3787405	0.671	0.3688883	0.706	0.3541042
0.637	0.3785251	0.672	0.3685355	0.707	0.3536068
0.638	0.3783050	0.673	0.3681788	0.708	0.3531051
0.639	0.3780829	0.674	0.3678180	0.709	0.3525992
0.640	0.3778560	0.675	0.3674531	0.710	0.3520890
0.641	0.3776253	0.676	0.3670842	0.711	0.3515746
0.642	0.3773907	0.677	0.3667113	0.712	0.3510559
0.643	0.3771523	0.678	0.3663342	0.713	0.3505329
0.644	0.3769100	0.679	0.3659531	0.714	0.3500058
0.645	0.3766639	0.680	0.3655580	0.715	0.3494741
0.646	0.3764139	0.681	0.3651788	0.716	0.3489383
0.647	0.3761600	0.682	0.3647854	0.717	0.3483982
0.648	0.3759022	0.683	0.3643880	0.718	0.3478538
0.649	0.3756405	0.684	0.3639865	0.719	0.3473050
0.650	0.3753750	0.685	0.3635809	0.720	0.3467520
0.651	0.3751055	0.686	0.3631711	0.721	0.3461946
0.652	0.3748322	0.687	0.3627573	0.722	0.3456330
0.653	0.3745549	0.688	0.3623393	0.723	0.3450669
0.654	0.3742737	0.689	0.3619172	0.724	0.3444966
0.655	0.3739886	0.690	0.3614910	0.725	0.3439219
0.656	0.3736996	0.691	0.3610606	0.726	0.3433428
0.657	0.3734066	0.692	0.3606261	0.727	0.3427594
0.658	0.3731097	0.693	0.3601874	0.728	0.3421716
0.659	0.3728088	0.694	0.3597446	0.729	0.3415795
0.660	0.3725040	0.695	0.3592976	0.730	0.3409830
0.661	0.3721952	0.696	0.3588465	0.731	0.3403821
0.662	0.3718825	0.697	0.3583911	0.732	0.3397768
0.663	0.3715657	0.698	0.3579316	0.733	0.3391672
0.664	0.3712450	0.699	0.3574679	0.734	0.3385531
0.665	0.3709204	0.700	0.3570000	0.735	0.3379346

TAB. XXIX.

x	a	x	a	x	a
0.735	0.3379346	0.770	0.3134670	0.805	0.2833399
0.736	0.3373117	0.771	0.3126860	0.806	0.2823934
0.737	0.3366844	0.772	0.3119003	0.807	0.2814421
0.738	0.3360527	0.773	0.3111101	0.808	0.2804859
0.739	0.3354165	0.774	0.3103152	0.809	0.2795249
0.740	0.3347760	0.775	0.3095156	0.810	0.2785590
0.741	0.3341310	0.776	0.3087114	0.811	0.2775883
0.742	0.3334815	0.777	0.3079026	0.812	0.2766127
0.743	0.3328276	0.778	0.3070890	0.813	0.2756322
0.744	0.3321692	0.779	0.3062709	0.814	0.2746469
0.745	0.3315064	0.780	0.3054480	0.815	0.2736566
0.746	0.3307391	0.781	0.3046205	0.816	0.2726615
0.747	0.3301673	0.782	0.3037882	0.817	0.2716615
0.748	0.3294910	0.783	0.3029513	0.818	0.2706566
0.749	0.3288103	0.784	0.3021097	0.819	0.2696467
0.750	0.3281250	0.785	0.3012634	0.820	0.2686320
0.751	0.3274352	0.786	0.3004123	0.821	0.2676123
0.752	0.3267410	0.787	0.2995566	0.822	0.2665878
0.753	0.3260422	0.788	0.2986961	0.823	0.2655582
0.754	0.3253389	0.789	0.2978309	0.824	0.2645238
0.755	0.3246311	0.790	0.2969610	0.825	0.2634844
0.756	0.3239188	0.791	0.2960863	0.826	0.2624400
0.757	0.3232019	0.792	0.2952069	0.827	0.2613907
0.758	0.3224805	0.793	0.2943227	0.828	0.2603364
0.759	0.3217545	0.794	0.2934338	0.829	0.2592772
0.760	0.3210240	0.795	0.2925401	0.830	0.2582130
0.761	0.3202889	0.796	0.2916417	0.831	0.2571438
0.762	0.3195493	0.797	0.2907384	0.832	0.2560696
0.763	0.3188051	0.798	0.2898304	0.833	0.2549904
0.764	0.3180563	0.799	0.2889176	0.834	0.2539063
0.765	0.3173029	0.800	0.2880000	0.835	0.2528171
0.766	0.3165449	0.801	0.2870776	0.836	0.2517229
0.767	0.3157823	0.862	0.2861504	0.837	0.2506237
0.768	0.3150151	0.803	0.2852184	0.838	0.2495195
0.769	0.3142434	0.804	0.2842815	0.839	0.2484103
0.770	0.3134670	0.805	0.2833399	0.840	0.2472960

TAB. XXIX.

x	a	x	a	x	a
0.840	0.2472960	0.875	0.2050781	0.910	0.1564290
0.841	0.2461767	0.876	0.2037786	0.911	0.1549420
0.842	0.2450523	0.877	0.2024739	0.912	0.1534495
0.843	0.2439229	0.878	0.2016385	0.913	0.1519515
0.844	0.2427884	0.879	0.1998486	0.914	0.1504481
0.845	0.2416489	0.880	0.1985280	0.915	0.1489391
0.846	0.2405043	0.881	0.1972022	0.916	0.1474247
0.847	0.2393546	0.882	0.1958710	0.917	0.1459048
0.848	0.2381998	0.883	0.1945346	0.918	0.1443794
0.849	0.2370400	0.884	0.1931929	0.919	0.1428484
0.850	0.2358750	0.885	0.1918459	0.920	0.1413120
0.851	0.2347049	0.886	0.1904935	0.921	0.1397700
0.852	0.2335298	0.887	0.1891359	0.922	0.1382226
0.853	0.2323495	0.888	0.1877729	0.923	0.1366695
0.854	0.2311641	0.889	0.1864046	0.924	0.1351110
0.855	0.2299736	0.890	0.1850310	0.925	0.1335469
0.856	0.2287780	0.891	0.1836520	0.926	0.1319772
0.857	0.2275772	0.892	0.1822677	0.927	0.1304020
0.858	0.2263713	0.893	0.1808780	0.928	0.1288212
0.859	0.2251602	0.894	0.1794830	0.929	0.1272349
0.860	0.2239440	0.895	0.1780826	0.930	0.1256430
0.861	0.2227226	0.896	0.1766769	0.931	0.1240455
0.862	0.2214961	0.897	0.1752657	0.932	0.1224424
0.863	0.2202644	0.898	0.1738492	0.933	0.1208338
0.864	0.2190275	0.899	0.1724273	0.934	0.1192195
0.865	0.2177854	0.900	0.1710000	0.935	0.1175996
0.866	0.2165381	0.901	0.1695673	0.936	0.1159741
0.867	0.2152856	0.902	0.1681292	0.937	0.1143430
0.868	0.2140280	0.903	0.1666857	0.938	0.1127063
0.869	0.2127651	0.904	0.1652367	0.939	0.1110640
0.870	0.2114970	0.905	0.1637824	0.940	0.1094160
0.871	0.2102237	0.906	0.1623226	0.941	0.1077624
0.872	0.2089452	0.907	0.1608574	0.942	0.1061031
0.873	0.2076614	0.908	0.1593867	0.943	0.1044382
0.874	0.2063724	0.909	0.1579106	0.944	0.1027676
0.875	0.2050781	0.910	0.1564290	0.945	0.1010914

TAB. XXIX.

x	*a*	*x*	*a*	*x*	*a*
0.945	0.10109:4	0.980	0.0388080	1.015	0.0306784
0.946	0.0994095	0.981	0.0369239	1.016	0.0327721
0.947	0.0977219	0.982	0.0350338	1.017	0.0348719
0.948	0.0960286	0.983	0.0331379	1.018	0.0369778
0.949	0.0943297	0.984	0.0312361	1.019	0.0390899
0.950	0.0926250	0.985	0.0293284	1.020	0.0412080
0.951	0.0909146	0.986	0.0274147	1.021	0.0433323
0.952	0.0891986	0.987	0.0254952	1.022	0.0454626
0.953	0.0874768	0.988	0.0235697	1.023	0.0475992
0.954	0.0857493	0.989	0.0216383	1.024	0.0497418
0.955	0.0840161	0.990	0.0197010	1.025	0.0518906
0.956	0.0822772	0.991	0.0177577	1.026	0.0540456
0.957	0.0805325	0.992	0.0158085	1.027	0.0562067
0.958	0.0787821	0.993	0.0138533	1.028	0.0583740
0.959	0.0770259	0.994	0.0118922	1.029	0.0605474
0.960	0.0752640	0.995	0.0099251	1.030	0.0627270
0.961	0.0734963	0.996	0.0079520	1.031	0.0649128
0.962	0.0717229	0.997	0.0059730	1.032	0.0671048
0.963	0.0699437	0.998	0.0039880	1.033	0.0693029
0.964	0.0681587	0.999	0.0019970	1.034	0.0715073
0.965	0.0663679	1.000	0.0000000	1.035	0.0737179
0.966	0.0645713	1.001	0.0020030	1.036	0.0759347
0.967	0.0627689	1.002	0.0040120	1.037	0.0781577
0.968	0.0609608	1.003	0.0060270	1.038	0.0803869
0.969	0.0591468	1.004	0.0080481	1.039	0.0826223
0.970	0.0573270	1.005	0.0100751	1.040	0.0848640
0.971	0.0555084	1.006	0.0121082	1.041	0.0871119
0.972	0.0536700	1.007	0.0141473	1.042	0.0893661
0.973	0.0518327	1.008	0.0161925	1.043	0.0916265
0.974	0.0499896	1.009	0.0182437	1.044	0.0938932
0.975	0.0481406	1.010	0.0203010	1.045	0.0961661
0.976	0.0462858	1.011	0.0223643	1.046	0.0984453
0.977	0.0444252	1.012	0.0244337	1.047	0.1007308
0.978	0.0425586	1.013	0.0265092	1.048	0.1030226
0.979	0.0406863	1.014	0.0285907	1.049	0.1053206
0.980	0.0388080	1.015	0.0306784	1.056	0.1076250

TAB. XXIX.

x	a	x	a	x	a
1.050	0.1076250	1.085	0.1922891	1.120	0.2849280
1.051	0.1099357	1.086	0.1948241	1.121	0.2876946
1.052	0.1122526	1.087	0.1973655	1.122	0.2904678
1.053	0.1145759	1.088	0.1999135	1.123	0.2932479
1.054	0.1169055	1.089	0.2024680	1.124	0.2960346
1.055	0.1192414	1.090	0.2050290	1.125	0.2988281
1.056	0.1215836	1.091	0.2075966	1.126	0.3016284
1.057	0.1239322	1.092	0.2101707	1.127	0.3044354
1.058	0.1262871	1.093	0.2127514	1.128	0.3072492
1.059	0.1286484	1.094	0.2153386	1.129	0.3100697
1.060	0.1310160	1.095	0.2179324	1.130	0.3128970
1.061	0.1333900	1.096	0.2205327	1.131	0.3157311
1.062	0.1357703	1.097	0.2231397	1.132	0.3185720
1.063	0.1381570	1.098	0.2257532	1.133	0.3214196
1.064	0.1405501	1.099	0.2283733	1.134	0.3242741
1.065	0.1429496	1.100	0.2310000	1.135	0.3271354
1.066	0.1453555	1.101	0.2336333	1.136	0.3300035
1.067	0.1477678	1.102	0.2362732	1.137	0.3328784
1.068	0.1501864	1.103	0.2389197	1.138	0.3357601
1.069	0.1526115	1.104	0.2415729	1.139	0.3386486
1.070	0.1550430	1.105	0.2442326	1.140	0.3415440
1.071	0.1574809	1.106	0.2468990	1.141	0.3444462
1.072	0.1599252	1.107	0.2495720	1.142	0.3473553
1.073	0.1623760	1.108	0.2522517	1.143	0.3502712
1.074	0.1648332	1.109	0.2549380	1.144	0.3531940
1.075	0.1672969	1.110	0.2576310	1.145	0.3561236
1.076	0.1697670	1.111	0.2603306	1.146	0.3590601
1.077	0.1722435	1.112	0.2630369	1.147	0.3620035
1.078	0.1747266	1.113	0.2657499	1.148	0.3649538
1.079	0.1772160	1.114	0.2684695	1.149	0.3679109
1.080	0.1797120	1.115	0.2711959	1.150	0.3708750
1.081	0.1822144	1.116	0.2739289	1.151	0.3738460
1.082	0.1847234	1.117	0.2766686	1.152	0.3768238
1.083	0.1872388	1.118	0.2794150	1.153	0.3798086
1.084	0.1897607	1.119	0.2821682	1.154	0.3828003
1.085	0.1922891	1.120	0.2849280	1.155	0.3857989

TAB XXX.

$$0 = z^3 - az - b$$

$$r = \sqrt{(\tfrac{4}{3}a)}$$

$$\text{coſ. } 3\,\omega = \frac{4b}{r^3}$$

$$z = r \text{ coſ. } \omega$$

$$0 = z^3 - az - b$$

$$r = \sqrt{(\tfrac{4}{3}a)}$$

$$\text{coſ. hyperb. } 3\,\omega = \frac{4b}{r^3}$$

$$z = r.\ \text{coſ. hyp. } \omega.$$

$$0 = z^3 - az - b$$

$$r = \sqrt{(\tfrac{4}{3}a)}$$

$$\text{ſec. } \Phi = \frac{4b}{r^3}$$

$$\text{tang. } \psi = \sqrt[3]{\ }\text{tang.}\ (45 + \tfrac{1}{2}\Phi)$$

$$z = r.\ \text{ſec. } (2\,\psi - 90^\circ)$$

$$0 = z^3 + az - b$$

$$r = \sqrt{\tfrac{4}{3}a}$$

$$\text{ſin. hyperb. } 3\,\omega = \frac{4b}{r^3}$$

$$z = r.\ \text{ſin. hyp. } \omega$$

$$0 = z^3 + az - b$$

$$r = \sqrt{(\tfrac{4}{3}a)}$$

$$\text{tang. } \Phi = \frac{4b}{r^3}$$

$$\text{tang. } \psi = \sqrt[3]{\ }\text{tang.}\ (45^\circ + \tfrac{1}{2}\Phi)$$

$$z = r.\ \text{tang.}\ (2\,\psi - 90^\circ)$$

TAB. XXXI.

$$0 = x^4 + Ax^2 + Bx + C$$

$$r = \tfrac{2}{3}\sqrt{(AA + 12\ C)}$$

$$D = \frac{2\ A^3 - 72\ AC + 27\ BB}{36\ C + 3\ AA}$$

$$\text{coſ.}\ 3\,\omega = \frac{D}{r}$$

$$z = r\ \text{coſ.}\ \omega$$

$$a = \sqrt{(z - \tfrac{2}{3} A)}$$

$$x = \pm \tfrac{1}{2} a \pm \sqrt{\left(-\tfrac{1}{2} A - \tfrac{1}{4} a^2 - \frac{B}{2a}\right)}$$

$$0 = x^4 + Ax^2 + Bx + C$$

$$r = \tfrac{2}{3}\sqrt{(AA + 12\ C)}$$

$$D = \frac{2\ A^3 - 72\ AC + 27\ BB}{36\ C + 3\ AA}$$

$$\text{coſ. hyp.}\ 3\,\omega = \frac{D}{r}$$

$$z = r.\ \text{coſ. hyp.}\ \omega$$

$$a = \sqrt{(z - \tfrac{2}{3} A)}$$

$$x = \pm \tfrac{1}{2} a \pm \sqrt{\left(-\tfrac{1}{2} A - \tfrac{1}{4} a^2 - \frac{B}{2\ a}\right)}$$

$$0 = x^4 + Ax^2 + Bx - C$$

$$12\ C > AA$$

$$r = \tfrac{2}{3}\sqrt{(12\ C - AA)}$$

$$C = \frac{2\ A^3 + 72\ AC + 27\ BB}{-\ 36\ C + 3\ AA}$$

$$\text{ſin. hyp.}\ 3\,\omega = \frac{D}{r}$$

$$z = r.\ \text{ſin. hyp.}\ \omega$$

$$a = \sqrt{(z - \tfrac{2}{3} A)}$$

$$x = \pm \tfrac{1}{2} a \pm \sqrt{\left(-\tfrac{1}{2} A - \tfrac{1}{4} a^2 - \frac{B}{2\ a}\right)}$$

TAB. XXXII.

Ang. trans.	Sector hyperbol.	Sinus hyperbol.	Cosinus hyperbol.	log. sin. hyperbol.
0	0.0000000	0000000	1.0000000	infin. negat.
1	..75803	.174551	1.0001523	8.2419215
2	.151628	.349208	1.0006095	8.5430838
3	.227500	.524078	1.0013723	8.7193958
4	.303441	.699268	1.0024419	8.8446437
5	.379475	.874887	1.0038198	8.9419518
6	.455626	1051042	1.0055082	9.0216202
7	.531916	1227846	1.0075099	9.0891438
8	.608369	1405408	1.0098276	9.1478025
9	.685011	1583844	1.0124651	9.1997125
10	.761865	1763270	1.0154267	9.2463188
11	.838955	1943803	1.0187168	9.2886523
12	.916308	2125565	1.0223407	9.3274745
13	.993948	2308682	1.0263039	9.3633641
14	1071902	2493280	1.0301635	9.3967711
15	1150195	2679492	1.0352762	9.4280525
16	1228856	2867454	1.0402994	9.4574964
17	1307911	3057307	1.0456918	9.4853390
18	1387390	3249197	1.0514622	9.5117760
19	1467320	3443276	1.0576207	9.5369719
20	1547732	3639706	1.0641778	9.5610658
21	1628657	3838640	1.0711450	9.5841774
22	1710126	4040262	1.0785347	9.6064096
23	1792171	4244749	1.0863604	9.6278519
24	1874826	4452287	1.0946363	9.6485831
25	1958127	4663077	1.1033779	9.6686725
26	2042108	4877326	1.1126019	9.6881818
27	2126807	5095254	1.1223262	9.7071650
28	2212263	5317094	1.1325701	9.7256744
29	2298515	5543090	1.1433141	9.7437520
30	2385606	5773503	1.1547005	9.7614394

TAB. XXXII.

log. coſin. hyperbol.	Tang. ang. communis.	log. tang. ang. commun.	Ang. communis.
10.0000000	0000000	infin. negat.	0. 0. 0. 0.
10.0000662	174524	8. 2418553	0.59.59.5
10.0002646	348995	8. 5428192	1.59.55.7
10.0005956	523360	8. 7188002	2.59.45.2
10.0010592	697565	8. 8435845	3.59.25.0
10.0016558	871557	8. 9402960	4.58.51.8
10.0023857	1045285	9. 0192346	5.58. 2.2
10.0032493	1218693	9. 0858945	6.56.54.0
10.0042472	1391731	9. 1435553	7.55.23.0
10.0053801	1564345	9. 1943324	8.53.27.5
10.0066485	1736482	9. 2396702	9.51. 3.9
10.0080534	1908090	9. 2805988	10.48. 9.7
10.0095956	2079117	9. 3178789	11.44.42.2
10.0112761	2249511	9. 3520880	12.40.39.8
10.0130959	2419219	9. 3836752	13.35.59.3
10.0150562	2588190	9. 4129962	14.30.38.9
10.0171584	2756374	9. 4403381	15.24.36.7
10.0194037	2923717	9. 4659353	16.17.50.7
10.0217937	3090170	9. 4899824	17.10.19.3
10.0243299	3255682	9. 5126419	18. 2. 1.0
10.0270142	3420202	9. 5340517	18.52.54.2
10.0298483	3583679	9. 5543292	19.42.57.8
10.0328341	3746066	9. 5735754	20.32.10.6
10.0359739	3907311	9. 5918780	21.20.31.7
10.0392698	4067366	9. 6093133	22. 8. 0.1
10.0427243	4226183	9. 6259483	22.54.35.3
10.0463397	4383712	9. 6418420	23.40.16.5
10.0501190	4539905	9. 6570468	24.25. 3.4
10.0540651	4694716	9. 6716093	25. 8.55.4
10.0581807	4848096	9. 6855712	25.51.52.4
10.0624694	5000000	9. 6989700	26.33.54.2

TAB. XXXII.

Ang. tranſ.	Sector hyperbol.	Sinus hyperbol.	Coſinus hyperbol.	log. ſin. hyperbol.
30	2385606	5773503	1.1547005	9.7614394
31	2473580	6008606	1.1666334	9.7787737
32	2562480	6248694	1.1791784	9.7957892
33	2652356	6494076	1.1923633	9.8125174
34	2743256	6745085	1.2062180	9.8289874
35	2835233	7002075	1.2207746	9.8452268
36	2928341	7265426	1.2360680	9.8612610
37	3022637	7535540	1.2521357	9.8771144
38	3118182	7812856	1.2690182	9.8928098
39	3215039	8097840	1.2867596	9.9083692
40	3313275	8390996	1.3054073	9.9238135
41	3412960	8692868	1.3250130	9.9391631
42	3514169	9004041	1.3456327	9.9544374
43	3616981	9325151	1.3673275	9.9696559
44	3721481	9656888	1.3901636	9.9848372
45	3827757	1.0000000	1.4142136	10.0000000
46	3935904	1.0355303	1.4395565	10.0151628
47	4046025	1.0723687	1.4662792	10.0303441
48	4158226	1.1106125	1.4944756	10.0455626
49	4272623	1.1503684	1.5242531	10.0608369
50	4389341	1.1917536	1.5557238	10.0761865
51	4508513	1.2348972	1.5890157	10.0916308
52	4630281	1.2799416	1.6242692	10.1071902
53	4754801	1.3270448	1.6616401	10.1228856
54	4882240	1.3763819	1.7013016	10.1387390
55	5012777	1.4281480	1.7434468	10.1547732
56	5146610	1.4825610	1.7882916	10.1710126
57	5283952	1.5398650	1.8360784	10.1874826
58	5425036	1.6003345	1.8870799	10.2042108
59	5570117	1.6642795	1.9416040	10.2212263
60	5719475	1.7320508	2.0000000	10.2385606

TAB. XXXII.

log. coſ. hyperbol.	Tang. ang. communis.	log. tang. ang. communis.	Angulus communis.
10.0624694	5000000	9.6989700	26.33.54.2
10.0669344	5150381	9.7118393	27.15. 0.7
10.0715795	5299193	9.7242097	27.55.11.9
10.0764086	5446390	9.7361088	28.34.28.0
10.0814258	5591929	9.7475617	29.12.49.0
10.0866315	5735764	9.7585913	29.50.15.2
10.0920424	5877853	9.7692187	30.26.47.0
10.0976514	6018150	9.7794630	31. 2.24.7
10.1034679	6156615	9.7893420	31.37. 8.4
10.1094974	6293204	9.7988718	32.11.59.0
10.1157460	6427876	9.8080675	32.43.56.4
10.1222201	6560590	9.8169429	33.15.57.9
10.1289265	6691306	9.8255109	33.47.15.7
10.1358725	6819984	9.8337833	34.17.38.1
10.1430659	6946584	9.8417713	34.47.10.0
10.1505150	7071068	9.8494850	35.15.52.0
10.1582286	7193398	9.8569341	35.43.44.3
10.1662167	7313537	9.8641275	36.10.48.0
10.1744891	7431448	9.8710735	36.37.15.5
10.1830571	7547096	9.8777799	37. 2.31.9
10.1919325	7660444	9.8842540	37.27.13.4
10.2011282	7771460	9.8905026	37.51. 8.7
10.2106580	7880107	9.8965321	38.14.18.6
10.2205370	7986355	9.9023486	38.36.43.6
10.2307813	8090170	9.9079576	38.58.24.4
10.2414087	8191521	9.9133645	39.19.21.9
10.2524383	8290376	9.9185742	39.39.36.0
10.2638912	8386706	9.9235914	39.59. 8.1
10.2757903	8480481	9.9284205	40.17.58.4
10.2881607	8571673	9.9330656	40.36. 7.5
10.3010300	8660254	9.9375306	40.53.36.2

TAB. XXXII.

Ang. tranſ.	Sector hyperbol.	Sinus hyperbol.	Coſinus hyperbol.	log. ſin. hyperbol.
60	5719475	1.7320508	2.0000000	10.2385606
61	5873419	1.8040478	2.0626653	10.2562480
62	6032289	1.8807265	2.1300545	10.2743256
63	6296463	1.9626105	2.2026893	10.2928341
64	6366359	2.0503038	2.2811720	10.3118182
65	6542448	2.1445069	2.3662016	10.3313275
66	6725255	2.2460368	2.4585933	10.3514169
67	6915374	2.3558524	2.5593047	10.3721481
68	7113477	2.4750869	2.6694672	10.3935904
69	7320331	2.6050891	2.7904281	10.4158226
70	7536812	2.7474774	2.9238044	10.4389341
71	7763935	2.9042109	3.0715535	10.4630281
72	8002875	3.0776835	3.2360680	10.4882240
73	8255012	3.2708526	3.4203036	10.5146610
74	8521975	3.4874144	3.5279553	10.5425036
75	8805709	3.7320508	3.8637033	10.5719475
76	9108562	4.0107809	4.1335655	10.6032289
77	9433405	4.3314759	4.4454115	10.6366359
78	9783798	4.7046301	4.8097343	10.6725255
79	1.0164231	5.1445540	5.2408431	10.7113477
80	1.0580482	5.6712818	5.7587705	10.7536812
81	1.1040158	6.3137515	6.3924532	10.8002875
82	1.1553563	7.1153697	7.1852965	10.8521975
83	1.2135139	8.1443464	8.2055090	10.9108562
84	1.2809042	9.5143645	9.5667722	10.9783798
85	1.3599059	11.4300523	11.4737132	11.0580482
86	1.4569162	14.3006663	14.3355870	11.1553563
87	1.5819321	19.0811367	19.1073226	11.2809042
88	1.7580785	28.6362533	28.6537083	11.4569162
89	2.0591416	57.2899617	57.2986885	11.7580785
90	infinit.	infinit.	infinit.	infinit.

TAB. XXXII.

log. coſ. hyperbol.	Tang. ang. communis.	log. tang. ang. communis.	Angulus communis.
10.3010300	8660254	9.9375306	40.53.36.2
10.3144288	8746197	9.9418193	41.10.24.9
10.3283907	8829470	9.9459349	41.26.34.1
10.3429532	8910065	9.9498809	41.42. 4.5
10.3581580	8987940	9.9536602	41.56.56.4
10.3740517	9063078	9.9572757	42.11.10.3
10.3906867	9135454	9.9607302	42.24.47.2
10.4081220	9205049	9.9640261	42.37.47.0
10.4264246	9271839	9.9671659	42.50.10.3
10.4456708	9335804	9.9701517	43. 1.57.4
10.4659483	9396926	9.9729857	43.13. 9.0
10.4873581	9455185	9.9756701	43.23.45.2
10.5100176	9510565	9.9782063	43.33.46.8
10.5340647	9563048	9.9805963	43.43.13.7
10.5596619	9612617	9.9828416	43.52. 6.4
10.5870038	9659258	9.9849438	44. 0.25.3
10.6163248	9702957	9.9869041	44. 8.20.9
10.6479120	9743701	9.9887239	44.15.22.5
10.6821211	9781476	9.9904044	44.22. 1.5
10.7194012	9816271	9.9919466	44.28. 7.6
10.7603298	9848077	9.9933515	44.33.41.2
10.8056676	9876883	9.9946199	44.38.42.4
10.8564447	9902680	9.9957528	44.43.11.4
10.9141055	9925462	9.9967507	44.47. 8.4
10.9807654	9945218	9.9976143	44.50.33.5
11.0597040	9961947	9.9983442	44.53.26.7
11.1564155	9975640	9.9989408	44.55.48.5
11.2811998	0986295	9.9994044	44.57.38.6
11.4571808	9993908	9.9997354	44.58.57.2
11.7581447	9998477	9.9999338	44.59.42.6
infinit.	1.0000000	10.0000000	45. 0. 0.0

TAB. XXXIII.

Fig. 11.

$Qq E$	Hyperbola aequilatera
CA	Aſymptotus.
CB	Axis
$CqQC$	Sector
pq	Sinus hyperbolicus $= QP$
Cp	coſin. hyperbol. $= CP$
qCQ	Angulus communis
PCQ	Angulus tranſcendens.

$CQ = 1$, Sector $CqQC = \frac{1}{2}\omega$

$pq = \frac{1}{2}(e^{\omega} - e^{-\omega}) =$ tang. PCQ

$Cp = \frac{1}{2}(e^{\omega} + e^{-\omega}) =$ ſec. PCQ

tang. $qCQ =$ ſin. PCQ.

TAB. XXXIV.

$$\sqrt{(1+x)} = 1 + \tfrac{1}{2}x - \tfrac{1}{8}x^2 + \tfrac{1}{16}x^3 - \tfrac{5}{128}x^4 + \tfrac{7}{256}x^5 - \tfrac{21}{1024}x^6 + \tfrac{33}{2048}x^7 - \tfrac{429}{32768}x^8 + \tfrac{715}{65536}x^9 - \&c.$$

$$\frac{1}{\sqrt{(1-x)}} = 1 + \tfrac{1}{2}x + \tfrac{3}{8}x^2 + \tfrac{5}{16}x^3 + \tfrac{35}{128}x^4 + \tfrac{63}{256}x^5 + \tfrac{231}{1024}x^6 + \tfrac{429}{2048}x^7 + \tfrac{6435}{32768}x^8 + \&c.$$

TAB. XXXIV.

$$\sqrt{(aa+b)} = a + \cfrac{1}{2a:b + \cfrac{1}{2a + \cfrac{1}{2a:b + \cfrac{1}{2a + \cfrac{1}{2a:b + \cfrac{1}{2a + \&c.}}}}}}$$

$$\sqrt{(a^3+b)} = a + \cfrac{1}{3a^2:b + \cfrac{1}{a + \cfrac{1}{9a^2:2b + \cfrac{1}{4a:5 + \cfrac{1}{75a^2:14b + \cfrac{1}{7a:10 + \&c.}}}}}}$$

$$(a+p)^n = a^n \left(\frac{2a+(n+1)p}{2a-(n-1)p} - n.\frac{n^2-1}{12}\left(\frac{p}{a}\right)^3 - \&c. \right)$$

$$\sqrt{(a+p)} = \frac{4a+3p}{4a+p}\sqrt{a} + \frac{1}{32}.\frac{p^3}{a^3}\sqrt{a} + \&c.$$

$$\sqrt[3]{(a+p)} = \frac{3a+2p}{3a+p}\sqrt[3]{a} + \frac{2}{81}.\frac{p^3}{a^3}.\sqrt[3]{a} + \&c.$$

$$a^2 + b = (a+x)^2$$

$$x = \frac{b}{2a+x}$$

$$a^3 + b = (a+x)^3$$

$$x = \frac{b}{3a}.\frac{1}{a+x+xx:3a}$$

NUMERORUM QUADRATORUM

TAB. XXXV.

	0.	100.	200.	300.	400.
1	1	10201	40401	90601	160801
2	4	10404	40804	91204	161604
3	9	10609	41209	91809	162409
4	16	10816	41616	92416	163216
5	25	11025	42025	93025	164025
6	36	11236	42436	93636	164836
7	49	11449	42849	94249	165649
8	64	11664	43264	94864	166464
9	81	11881	43681	95481	167281
10	100	12100	44100	96100	168100
11	121	12321	44521	96721	168921
12	144	12544	44944	97344	169744
13	169	12769	45369	97969	170569
14	196	12996	45796	98596	171396
15	225	13225	46225	99225	172225
16	256	13456	46656	99856	173056
17	289	13689	47089	100489	173889
18	324	13924	47524	101124	174724
19	361	14161	47961	101761	175561
20	400	14400	48400	102400	176400
21	441	14641	48841	103041	177241
22	484	14884	49284	103684	178084
23	529	15129	49729	104329	178929
24	576	15376	50176	104976	179776
25	625	15625	50625	105625	180625
26	676	15876	51076	106276	181476
27	729	16129	51529	106929	182329
28	784	16384	51984	107584	183184
29	841	16641	52441	108241	184041
30	900	16900	52900	108900	184900
31	961	17161	53361	109561	185761
32	1024	17424	53824	110224	186624
33	1089	17689	54289	110889	187489
34	1156	17956	54756	111556	188356

TAB. XXXV.

500.	600.	700.	800.	900.
251001	361201	491401	641601	811801
252004	362404	492804	643204	813604
253009	363609	494209	644809	815409
254016	364816	495616	646416	817216
255025	366025	497025	648025	819025
256036	367236	498436	649636	820836
257049	368449	499849	651249	822649
258064	369664	501264	652864	824464
259081	370881	502681	654481	826281
260100	372100	504100	656100	828100
261121	373321	505521	657721	829921
262144	374544	506944	659344	831744
263169	375769	508369	660969	833569
264196	376996	509796	662596	835396
265225	378225	511225	664225	837225
266256	379456	512656	665856	839056
267289	380689	514089	667489	840889
268324	381924	515524	669124	842724
269361	383161	516961	670761	844561
270400	384400	518400	672400	846400
271441	385641	519841	674041	848241
272484	386884	521284	675684	850084
273529	388129	522729	677329	851929
274576	389376	524176	678976	853776
275625	390625	525625	680625	855625
276676	391876	527076	682276	857476
277729	393129	528529	683929	859329
278784	394384	529984	685584	861184
279841	395641	531441	687241	863041
280900	396900	532900	688900	864900
281961	398161	534361	690561	866761
283024	399424	535824	692224	868624
284089	400689	537289	693889	870489
285156	401956	538756	695556	872356

TAB. XXXV.

	0.	100.	200.	300.	400.
34	1156	17956	54756	111556	188356
35	1225	18225	55225	112225	189225
36	1296	18496	55696	112896	190096
37	1369	18769	56169	113569	190961
38	1444	19044	56644	114244	191844
39	1521	19321	57121	114921	192721
40	1600	19600	57600	115600	193600
41	1681	19881	58081	116281	194481
42	1764	20164	58564	116964	195364
43	1849	20449	59049	117649	196249
44	1936	20736	59536	118336	197136
45	2025	21025	60025	119025	198025
46	2116	21316	60516	119716	198916
47	2209	21609	61009	120409	199809
48	2304	21904	61504	121104	200704
49	2401	22201	62001	121801	201601
50	2500	22500	62500	122500	202500
51	2601	22801	63001	123201	203404
52	2704	23104	63504	123904	204304
53	2809	23409	64009	124609	205209
54	2916	23716	64516	125316	206116
55	3025	24025	65025	126025	207025
56	3136	24336	65536	126736	207936
57	3249	24649	66049	127449	208849
58	3364	24964	66564	128164	209764
59	3481	25281	67081	128881	210681
60	3600	25600	67600	129600	211600
61	3721	25921	68121	130321	212521
62	3844	26244	68644	131044	213444
63	3969	26569	69169	131769	214369
64	4096	26896	69696	132496	215296
65	4225	27225	70225	133225	216225
66	4356	27556	70756	133956	217156
67	4489	27889	71289	134689	218089

TAB. XXXV.

500.	600.	700.	800.	900.
285156	401956	538756	695556	872356
286225	403225	540225	697225	874225
287296	404496	541696	698896	876096
288369	405769	543169	700569	877969
289444	407044	544644	702244	879844
290521	408321	546121	703921	881721
291600	409600	547600	705600	883600
292681	410881	549081	707281	885481
293764	412164	550564	708964	887364
294849	413449	552049	710649	889249
295936	414736	553536	712336	891136
297025	416025	555025	714025	893025
298116	417316	556516	715716	894916
299209	418609	558009	717409	896809
300304	419904	559504	719104	898704
301401	421201	561001	720801	900601
302500	422500	562500	722500	902500
303601	423801	564001	724201	904401
304704	425104	565504	725904	906304
305809	426409	567009	727609	908209
306916	427716	568516	729316	910116
308025	429025	570025	731025	912025
309136	430336	571536	732736	913936
310249	431649	573049	734449	915849
311364	432964	574564	736164	917764
312481	434281	576081	737881	919681
313600	435600	577600	739600	921600
314721	436921	579121	741321	923521
315844	438244	580644	743044	925444
316969	439569	582169	744769	927369
318096	440896	583696	746496	929296
319225	442225	585225	748225	931225
320356	443556	586756	749956	933156
321489	444889	508289	751689	935089

TAB. XXXV.

	0.	100.	200.	300.	400.
67	4489	27889	71289	134689	218089
68	4624	28224	71824	135424	219024
69	4761	28561	72361	136161	219961
70	4900	28900	72900	136900	220900
71	5041	29241	73441	137641	221841
72	5184	29584	73984	138384	222784
73	5329	29929	74529	139129	223729
74	5476	30276	75076	139876	224676
75	5625	30625	75625	140625	225625
76	5776	30976	76176	141376	226576
77	5929	31329	76729	142129	227529
78	6084	31684	77284	142884	228484
79	6241	32041	77841	143641	229441
80	6400	32400	78400	144400	230400
81	6561	32761	78961	145161	231361
82	6724	33124	79524	145924	232324
83	6889	33489	80089	146689	233289
84	7056	33856	80656	147456	234256
85	7225	34225	81225	148225	235225
86	7396	34596	81796	148996	236196
87	7569	34969	82369	149769	237169
88	7744	35344	82944	150544	238144
89	7921	35721	83521	151321	239121
90	8100	36100	84100	152100	240100
91	8281	36481	84681	152881	241081
92	8464	36864	85264	153664	242064
93	8649	37249	85849	154449	243049
94	8836	37636	86436	155236	244036
95	9025	38025	87025	156025	245025
96	9216	38416	87616	156816	246016
97	9409	38809	88209	157609	247009
98	9604	39204	88804	158404	248004
99	9801	39601	89401	159201	249001
100	10000	40000	90000	160000	250000

TAB. XXXV.

500.	600.	700.	800.	900.
321489	444889	588289	751689	935089
322624	446224	589824	753424	937024
323761	447561	591361	755161	938961
324900	448900	592900	756900	940900
326041	450241	594441	758641	942841
327184	451584	595984	760384	944784
328329	452929	597529	762129	946729
329476	454276	599076	763876	948676
330625	455625	600625	765625	950625
331776	456976	602176	767376	952576
332929	458329	603729	769129	954529
334084	459684	605284	770884	956484
335241	461041	606841	772641	958441
336400	462400	608400	774400	960400
337561	463761	609961	776161	962361
338724	465124	611524	777924	964324
339889	466489	613089	779689	966289
341056	467856	614656	781456	968256
342225	469225	616225	783225	970225
343396	470596	617796	784996	972196
344569	471969	619369	786769	974169
345744	473344	620944	788544	976144
346921	474721	622521	790321	978121
348100	476100	624100	792100	980100
349281	477481	625681	793881	982081
350464	478864	627264	795664	984064
351649	480249	628849	797449	986049
352836	481636	630436	799236	988036
354025	483025	632025	801025	980025
355216	484416	633616	802816	992016
356409	485809	635209	804609	994009
357604	487204	636804	806404	996004
358801	488601	638401	808201	998001
360000	490000	640000	810000	1000000

TAB. XXXV.

	0.	100.	200.	300.	400.
1	1	1030301	8120601	27270901	64481201
2	8	1061208	8242408	27543608	64964808
3	27	1092727	8365427	27818127	65450827
4	64	1124864	8489664	28094464	65939264
5	125	1157625	8615125	28372625	66430125
6	216	1191016	8741816	28652616	66923416
7	343	1225043	8869743	28934443	67419143
8	512	1259712	8998912	29218112	67917312
9	729	1295029	9129329	29503629	68417929
10	1000	1331000	9261000	29791000	68921000
11	1331	1367631	9393931	30080231	69426531
12	1728	1404928	9528128	30371328	69934528
13	2197	1442897	9663597	30664297	70444997
14	2744	1481544	9800344	30959144	70957944
15	3375	1520875	9938375	31255875	71473375
16	4096	1560896	10077696	31554496	71991296
17	4913	1601613	10218313	31855013	72511713
18	5832	1643032	10360232	32157432	73034632
19	6859	1685159	10503459	32461759	73560059
20	8000	1728000	10648000	32768000	74088000
21	9261	1771561	10793861	33076161	74618461
22	10648	1815848	10941048	33386248	75151448
23	12167	1860867	11089567	33698267	75686967
24	13824	1906624	11239424	34012224	7622 024
25	15625	1953125	11390625	34328125	76765625
26	17576	2000376	11543176	34645976	77308776
27	19683	2048383	11697083	34965783	77854483
28	21952	2097152	11852352	35287552	78402752
29	24389	2146689	12008989	35611289	78953589
30	27000	2197000	12167000	35937000	79507000
31	29791	2248091	12326391	36264691	80062991
32	32768	2299968	12487168	36594368	80621568
33	35937	2352637	12649337	36926037	81182737
34	39304	2406104	12812904	37259704	81746504

TAB. XXXVI.

500.	600.	700.	800.	900.
125751501	217081801	344472101	513922401	731432701
126506008	218167208	345948408	515849608	733870808
127263527	219256227	347428927	517781627	736314327
128024064	220348864	348913664	519718464	738763264
128787625	221445125	350402625	521660125	741217625
129554216	222545016	351895816	523606616	743677416
130323843	223648543	353393243	525557943	746142643
131096512	224755712	354894912	527514112	748613312
131872229	225866529	356400829	529475129	751089429
132651000	226981000	357911000	531441000	753571000
133432831	228099131	359425431	533411731	756058031
134217728	229220928	360944128	535387328	758550528
135005697	230346397	362467097	537367797	761048497
135796744	231475544	363994344	539353144	763551944
136590875	232608375	365525875	541343375	766060875
137388096	233744896	367061696	543338496	768575296
138188413	234885113	368601813	545338513	771095213
138991832	236029032	370146232	547343432	773620632
139798359	237176659	371694959	549353259	776151559
140608000	238328000	373248000	551368000	778688000
141420761	239483061	374805361	553387661	781229961
142236648	240641848	376367048	555412248	783777448
143055667	241804367	377933067	557441767	786330467
143877824	242970624	379503424	559476224	788889024
144703125	244140625	381078125	561515625	791453125
145531576	245314376	382657176	563559976	794022776
146363183	246491883	384240583	565609283	796597983
147197952	247673152	385828352	567663552	799178752
148035889	248858189	387420489	569722789	801765089
148877000	250047000	389017000	571787000	804357000
149721291	251239591	390617891	573856191	806954491
150568768	252435968	392223168	575930368	809557568
151419437	253636137	393832837	578009537	812166237
152273304	254840104	395446904	580093704	814780504

NUMERORUM CUBICORUM

TAB. XXXVI.

	0.	100.	200.	300.	400.
34	39304	2406104	12812904	37259704	81746504
35	42875	2460375	12977875	37595375	82312875
36	46656	2515456	13144256	37933056	82881856
37	50653	2571353	13312053	38272753	83453453
38	54872	2628072	13481272	38614472	84027672
39	59319	2685619	13651919	38958219	84604519
40	64000	2744000	13824000	39304000	85184000
41	68921	2803221	13997521	39651821	85766121
42	74088	2863288	14172488	40001688	86350888
43	79507	2924207	14348907	40353607	86938307
44	85184	2985984	14526784	40707584	87528384
45	91125	3048625	14706125	41063625	88121125
46	97336	3112136	14886936	41421736	88716536
47	103823	3176523	15069223	41781923	89314623
48	110592	3241792	15252992	42144192	89915392
49	117649	3307949	15438249	42508549	90518849
50	125000	3375000	15625000	42875000	91125000
51	132651	3442951	15813251	43243551	91733851
52	140608	3511808	16003008	43614208	92345408
53	148877	3581577	16194277	43986977	92959677
54	157464	3652264	16387064	44361864	93576664
55	166375	3723875	16581375	44738875	94196375
56	175616	3796416	16777216	45118016	94818816
57	185193	3869893	16974593	45499293	95443993
58	195112	3944312	17173512	45882712	96071912
59	205379	4019679	17373979	46268279	96702579
60	216000	4096000	17576000	46656000	97336000
61	226981	4173281	17779581	47045881	97972181
62	238328	4251528	17984728	47437928	98611128
63	250047	4330747	18191447	47832147	99252847
64	262144	4410944	18399744	48228544	99897344
65	274625	4492125	18609625	48627125	100544625
66	287496	4574296	18821096	49027896	101194696
67	300763	4657463	19034163	49430863	101847563

TAB. XXXVI.

500.	600.	700.	800.	900.
152273304	254840104	395446904	580093704	814780504
153130375	256047875	397065375	582182875	817400375
153990656	257259456	398688256	584277056	820025856
154854153	258474853	400315553	586376253	822656953
155720872	259694072	401947272	588480472	825293672
156590819	260917119	403583419	590589719	827936019
157464000	262144000	405224000	592704000	830584000
158340421	263374721	406869021	594823321	833237621
159220088	264609288	408518488	596947688	835896888
160103007	265847707	410172407	599077107	838561807
160989184	267089984	411830784	601211584	841232384
161878625	268336125	413493625	603351125	843908625
162771336	269586136	415160936	605495736	846590536
163667323	270840023	416832723	607645423	849278123
164566592	272097792	418508992	609800192	851971392
165469149	273359449	420189749	611960049	854670349
166375000	274625000	421875000	614125000	857375000
167284151	275894451	423564751	616295051	860085351
168196608	277167808	425259008	618470208	862801408
169112377	278445077	426957777	620650477	865523177
170031464	279726264	428661064	622835864	868250664
170953875	281011375	430368875	625026375	870983875
171879616	282300416	432081216	627222016	873722816
172808693	283593393	433798093	629422793	876467493
173741112	284890312	435519512	631628712	879217912
174676879	286191179	437245479	633839779	881974079
175616000	287496000	438976000	636056000	884736000
176558481	288804781	440711081	638277381	887503681
177504328	290117528	442450728	640503928	890277128
178453547	291434247	444194947	642735647	893056347
179406144	292754944	445943744	644972544	895841344
180362125	294079625	447697125	647214625	898632125
181321496	295408296	449455096	649461896	901428696
182284263	296740963	451217663	651714363	904231063

TAB. XXXVI.

	0.	100.	200.	300.	400.
67	300763	4657463	19034163	49430863	101847563
68	314432	4741632	19248832	49836032	102503232
69	328509	4826809	19465109	50243409	103161709
70	343000	4913000	19683000	50653000	103823000
71	357911	5000211	19902511	51064811	104487111
72	373248	5088448	20123648	51478848	105154048
73	389017	5177717	20346417	51895117	105823817
74	405224	5268024	20570824	52313624	106496424
75	421875	5359375	20796875	52734375	107171875
76	438976	5451776	21024576	53157376	107850176
77	456533	5545233	21253933	53582633	108531333
78	474552	5639752	21484952	54010152	109215352
79	493039	5735339	21717639	54439939	109902239
80	512000	5832000	21952000	54872000	110592000
81	531441	5929741	22188041	55306341	111284641
82	551368	6028568	22425768	55742968	111980168
83	571787	6128487	22665187	56181887	112678587
84	592704	6229504	22906304	56623104	113379904
85	614125	6331625	23149125	57066625	114084125
86	636056	6434856	23393656	57512456	114791256
87	658503	6539203	23639903	57960603	115501303
88	681472	6644672	23887872	58411072	116214272
89	704969	6751269	24137569	58863869	116930169
90	729000	6859000	24389000	59319000	117649000
91	753571	6967871	24642171	59776471	118370771
92	778688	7077888	24897088	60236288	119095488
93	804357	7189057	25153757	60698457	119823157
94	830584	7301384	25412184	61162984	120553784
95	857375	7414875	25672375	61629875	121287375
96	884736	7529536	25934336	62099136	122023936
97	912673	7645373	26198073	62570773	122763473
98	941192	7762392	26463592	63044792	123505992
99	970299	7880599	26730899	63521199	124251499
100	1000000	8000000	27000000	64000000	125000000

TAB. XXXV.

500.	600.	700.	800.	900.
182284263	296740963	451217663	651714363	904231063
183250432	298077632	452984832	653972032	907039232
184220009	299418309	454756609	656234909	909853209
185193000	300763000	456533000	658503000	912673000
186169411	302111711	458314011	660776311	915498611
187149248	303464448	460099648	663054848	918330048
188132517	304821217	461889917	665338617	921167317
189119224	306182024	463684824	667627624	924010424
190109375	307546875	465484375	669921875	926859375
191102976	308915776	467288576	672221376	929714176
192100033	310288733	469097433	674526133	932574833
193100552	311665752	470910952	676836152	935441352
194104539	313046839	472729139	679151439	938313739
195112000	314432000	474552000	681472000	941192000
196122941	315821241	476379541	683797841	944076141
197137368	317214568	478211768	686128968	946966168
198155287	318611987	480048687	688465387	949862087
199176704	320013504	481890304	690807104	952763904
200201625	321419125	483736625	693154125	955671625
201230056	322828856	485587656	695506456	958585256
202262003	324242703	487443403	697864103	961504803
203297472	325660672	489303872	700227072	964430272
204336469	327082769	491169069	702595369	967361669
205379000	328509000	493039000	704969000	970299000
206425071	329939371	494913671	707347971	973242271
207474688	331373888	496793088	709732288	976191488
208527857	332812557	498677257	712121957	979146657
209584584	334255384	500566184	714516984	982107784
210644875	335702375	502459875	716917375	985074875
211708736	337153536	504358336	719323136	988047936
212776173	338608873	506261573	721734273	991026973
213847192	340068392	508169592	724150792	994011992
214921799	341532099	510082399	726572699	997002999
216000000	343000000	512000000	729000000	1000000000

TAB. XXXVII.

1	1	1	1	1	1	1	1
2	3	4	5	6	7	8	9
3	6	10	15	21	28	36	45
4	10	20	35	56	84	120	165
5	15	35	70	126	210	330	495
6	21	56	126	252	462	792	1287
7	28	84	210	462	924	1716	3003
8	36	120	330	792	1716	3432	6435
9	45	165	495	1287	3003	6435	12870
10	55	220	715	2002	5005	11440	24310
11	66	286	1001	3003	8008	19448	43758
12	78	364	1365	4368	12376	31824	75582
13	91	455	1820	6188	18564	50388	125970
14	105	560	2380	8568	27132	77520	203490
15	120	680	3060	11628	38760	116280	319770
16	136	816	3876	15504	54264	170544	490314
17	153	969	4845	20349	74613	245157	735471
18	171	1140	5985	26334	100947	346104	1081575
19	190	1330	7315	33649	134596	480700	1562275
20	210	1540	8855	42504	177100	657800	2220075
21	231	1771	10626	53130	230230	888030	3108105
22	253	2024	12650	65780	296010	1184040	4292145
23	276	2300	14950	80730	376740	1560780	5852925
24	300	2600	17550	98280	475020	2035800	7888725
25	325	2925	20475	118755	593775	2629575	10518300
26	351	3276	23751	142506	736281	3365856	13884156
27	378	3654	27405	169911	906192	4272048	18156204
28	406	4060	31465	201376	1107568	5379616	23535820
29	435	4495	35960	237336	1344904	6724520	30260340
30	465	4960	40920	278256	1623160	8347680	38608020

TAB. XXXVII.

1	1	1	1
10	11	12	13
55	66	78	91
220	286	364	455
715	1001	1365	1820
2002	3003	4368	6188
5005	8008	12376	18564
11440	19448	31824	50388
24310	43758	75582	125970
48620	92378	167960	293930
92378	184756	352716	646646
167960	352716	705432	1352078
293930	646646	1352078	2704156
497420	1144066	2496144	5200300
817190	1961256	4457400	9657700
1307504	3268760	7726160	17383860
2042975	5311735	13037895	30421755
3124550	8436285	21474180	51895935
4686825	13123110	34597290	86493225
6906900	20030010	54627300	141120525
10015005	30045015	84672315	225792840
14307150	44352165	129024480	354817320
20160075	64512240	193536720	548354040
28048800	92561040	286097760	834451800
38567100	131128140	417225900	1251677700
52451256	183579396	600805296	1852482996
70607460	254186856	854992152	2707475148
94143280	348330136	1203322288	3910797436
124403620	472733756	1676056044	5586853480
163011640	635745396	2311801440	7898654920

TAB. XXXVIII.

I°. $y = a + bx + cx^2 + dx^3 + ex^4 + \&c.$

$$= A + B\frac{x-m}{m} + C\frac{x-m}{m}.\frac{x-n}{n} + D\frac{x-m}{m}.\frac{x-n}{n}.\frac{x-p}{p} + \&c.$$

$x = m\,.\,n\,.\,p\,.\,q\,.\,r$ &c.

$y = \alpha\,.\,\beta\,.\,\gamma\,.\,\delta\,.\,\varepsilon$ &c.

$A = \alpha$

$B = (\beta - A).\frac{m}{n-m}$

$C = \left(\gamma - A - B.\frac{p-m}{m}\right).\frac{m}{p-m}.\frac{n}{p-n}$

$D = \left(\delta - A - B.\frac{q-m}{m} - C\frac{q-m}{m}.\frac{q-n}{n}\right).\frac{m}{q-m}.\frac{n}{q-n}.\frac{p}{q-p}$

&c.

$m\,.\,n\,.\,p\,.\,q\,.\,r$ &c.

$1\,.\,2\,.\,3\,.\,4\,.\,5$ &c.

$A = \alpha$

$B = \beta - \alpha$

$C = \gamma - 2\beta + \alpha$

$D = \delta - 3\gamma + 3\beta - \alpha$ &c.

II°. $y = ax + bx^2 + cx^3 + dx^4 + ex^5 + \&c.$

$$= Ax + Bx.\frac{x-m}{m} + Cx\frac{x-m}{m}.\frac{x-n}{n} + \&c.$$

$x = m\,.\,n\,.\,p\,.\,q\,.\,r$ &c.

$y = \alpha\,.\,\beta\,.\,\gamma\,.\,\delta\,.\,\varepsilon$ &c.

$A = \alpha$

$B = (\beta : n - A)\frac{m}{n-m}$

$C = \left(\gamma : p - A - B.\frac{p-m}{m}\right).\frac{m}{p-m}.\frac{n}{p-n}$

$D = \left(\delta : q - A - B.\frac{q-m}{m}. - C.\frac{q-m}{m}.\frac{q-n}{n}\right).\frac{m}{q-m}.\frac{n}{q-n}.\frac{p}{q-p}$

&c.

$m\,.\,n\,.\,p\,.\,q$ &c.

$1\,.\,2\,.\,3\,.\,4$ &c.

$A = \alpha$

$B = (\beta - 2\alpha) : 2$

$C = (\gamma - 3\beta + 3\alpha) : 3$

$D = (\delta - 4\gamma + 6\beta - 4\alpha) : 4$ &c.

III°. $y = ax + bx^3 + cx^5 + dx^7 + \&c.$

$$= Ax + Bx.\frac{x^2 - m^2}{m^2} + Cx.\frac{xx - mm}{mm}.\frac{xx - nn}{nn} + \&c.$$

$x = m . n . p . q . r . \&c.$

$y = \alpha . \beta . \gamma . \delta . \varepsilon . \&c.$

$A = \alpha : m$

$B = (\beta : n - A).\frac{mm}{nn - mm}$

$C = \left(\gamma : p - A - B\frac{pp - mm}{mm}\right).\frac{mm}{pp - mm}.\frac{nn}{pp - nn}.$

&c.

$m . n . p . q$ &c.

$1 . 2 . 3 . 4$ &c.

$A = \alpha$

$B = (\beta - 2\alpha) : 6$

$C = (\gamma - 4\beta + 5\alpha) : 30$

$D = (\delta - 6\gamma + 14\beta - 14\alpha) : 140$

$E = (\varepsilon - 8\delta + 27\gamma - 48\beta + 42\alpha) : 630$

&c.

IV°. $y = ax^2 + bx^4 + cx^6 + dx^8 + \&c.$

$$= Ax^2 + Bx^2.\frac{xx - mm}{mm} + Cx^2.\frac{xx - mm}{mm}.\frac{xx - nn}{nn}$$

$+ \&c.$

$x = m . n . p . q$ &c.

$y = \alpha . \beta . \gamma . \delta$ &c.

$A = \alpha : mm$

$B = (\beta : nn - A).\frac{mm}{nn - mm}$

$C = \left(\gamma : pp - A - B.\frac{pp - mm}{mm}\right).\frac{mm}{pp - mm}.\frac{nn}{pp - nn}.$

&c.

$m . n , p . q$ &c.

$1 . 2 . 3 . 4$ &c.

$A = \alpha$

$B = (\beta - 4\alpha) : 12$

$C = (\gamma - 6\beta + 15\alpha) : 90$

$D = (\delta - 8\gamma + 28\beta - 56\alpha) : 560$

$E = (\varepsilon - 10\delta + 45\gamma - 120\beta + 210\alpha) : 3150$

$F = (\zeta - 12\varepsilon + 66\delta - 220\gamma + 495\beta - 792\alpha) : 16632$

&c.

TAB. XXXIX.

$$y = a + bx + cx^2 + dx^3 + ex^4 + fx^5$$

$y^2 = a^2$	$2ab$	$2ac$ bb	$2ad$ $2bc$	$2ae$ $2bd$ cc	$2af$ $2be$ $2cd$
$y^3 = a^3$	$3a^2b$	$3a^2c$ $3ab^2$	$3a^2d$ $6abc$ b^3	$3a^2e$ $6abd$ $3b^2c$ $3ac^2$	$3a^2f$ $6abe$ $3b^2d$ $6acd$ $3bcc$
$y^4 = a^4$	$4a^3b$	$4a^3c$ $6a^2b^2$	$4a^3d$ $12a^2bc$ $4ab^3$	$4a^3e$ $12a^2bd$ $12ab^2c$ $6a^2c^2$ b^4	$4a^3f$ $12a^2be$ $12ab^2d$ $12a^2cd$ $4b^3c$ $12abc^2$
$y^5 = a^5$	$5a^4b$	$5a^4c$ $10a^3b^2$	$5a^4d$ $20a^3bc$ $10a^2b^3$	$5a^4e$ $20a^3bd$ $30a^2b^2c$ $10a^3c^2$ $5ab^4$	$5a^4f$ $20a^3be$ $30a^2b^2d$ $20a^3cd$ $20ab^3c$ $30a^2bc^2$ b^5
$y^6 = a^6$	$6a^5b$	$6a^5c$ $15a^4b^2$	$6a^5d$ $30a^4bc$ $20a^3b^3$	$6a^5e$ $30a^4bd$ $60a^3b^2c$ $15a^4c^2$ $15a^2b^4$	$6a^5f$ $30a^4be$ $60a^3b^2d$ $30a^4cd$ $60a^2b^3c$ $60a^3bc^2$ $6ab^5$
$y^7 = a^7$	$7a^6b$	$7a^6c$ $21a^5b^2$	$7a^6d$ $42a^5bc$ $35a^4b^3$	$7a^6e$ $42a^5bd$ $105a^4b^2c$ $21a^5c^2$ $35a^3b^4$	$7a^6f$ $42a^5be$ $105a^4b^2d$ $42a^5cd$ $140a^3b^3c$ $105a^4bc^2$ $21a^2b^5$

$$y = x + ax^2 + bx^3 + cx^4 + dx^5 + ex^6 + fx^7 + gx^8 + hx^9 + ix^{10}$$

$y^2 =$		1	$2a$	$2b$ a^2	$2c$ $2ab$	$2d$ $2ac$ b^2	$2e$ $2ad$ $2bc$	$2f$ $2ae$ $2bd$ c^2	$2g$ $2af$ $2be$ $2cd$	$2h$ $2ag$ $2bf$ $2ce$ d^2
$y^3 =$			1	$3a$	$3b$ $3a^2$	$3c$ $6ab$ a^3	$3d$ $6ac$ $3b^2$ $3a^2b$	$3e$ $6ad$ $6bc$ $3a^2c$ $3ab^2$	$3f$ $6ae$ $6bd$ $3a^2d$ $6abc$ $3c^2$ b^3	$3g$ $6af$ $6be$ $3a^2e$ $6abd$ $6cd$ $3b^2c$ $3ac^2$
$y^4 =$				1	$4a$	$4b$ $6a^2$	$4c$ $12ab$ $4a^3$	$4d$ $12ac$ $12ab^2$ $6b^2$ a^4	$4e$ $12ad$ $12bc$ $12a^2c$ $12ab^2$ $4a^3b$	$4f$ $12ae$ $12bd$ $6c^2$ $12a^2d$ $6a^2b^2$ $24abc$ $4a^3c$ $4b^3$
$y^5 =$					1	$5a$	$5b$ $10a^2$	$5c$ $20ab$ $10a^3$	$5d$ $20ac$ $30a^2b$ $10b^2$ $5a^4$	$5e$ $20ad$ $20bc$ $30a^2c$ $30ab^2$ $20a^3b$ a^5
$y^6 =$						1	$6a$	$6b$ $15a^2$	$6c$ $30ab$ $20a^3$	$6d$ $30ac$ $15b^2$ $60a^2b$ $15a^4$
$y^7 =$							1	$7a$	$7b$ $21a^2$	$7c$ $42ab$ $35a^3$
$y^8 =$								1	$8a$	$8b$ $28a^2$
$y^9 =$									1	$9a$

TAB. XL.

x	x^2	x^3	x^4	x^5	x^6
01	0001	000001	00000001		
02	4	0008	0016		
03	9	0027	0081	00000002	
04	16	0064	0256	0010	
05	25	0125	0625	0031	00000002
06	36	0216	1296	0078	005
07	49	0343	2401	0168	012
08	64	0512	4096	0328	026
09	81	0729	6561	0590	053
10	0100	1000	00010000	1000	100
11	21	1331	14641	1611	177
12	44	1728	20736	2487	298
13	69	2197	28561	3713	483
14	96	2744	38416	5378	753
15	0225	3375	50625	7594	00001139
16	56	4096	65536	00010490	1678
17	89	4913	83521	14199	2414
18	0324	5832	00104976	18896	3401
19	61	6859	130321	24761	4705
20	0400	8000	160000	32000	6400
21	441	9261	194481	40841	8577
22	484	010648	234256	51536	00011338
23	529	2167	279841	64363	14804
24	576	3824	331776	79626	19110
25	625	5625	390625	97656	24414
26	676	7576	456976	00118814	30892
27	729	9683	531441	143489	38742
28	784	021952	614656	172104	48189
29	841	4389	707281	205111	59482
30	900	7000	810000	243000	72900
31	961	9791	923521	286292	88750
32	1024	032768	01048576	335544	00107374
33	1089	5937	1185921	391354	129147
34	1156	9304	1336336	454354	154480

TAB. XL.

x^7	x^8	x^9	x^{10}	x^{11}
00000001				
02				
05				
10	00000001			
19	02			
36	04	00000001		
63	08	01		
00000105	15	02		
171	26	05	00000001	
269	43	07	01	
410	70	12	02	
612	00000110	20	04	00000001
894	170	32	06	01
00001280	256	51	10	02
1801	378	79	17	04
2494	549	00000121	27	06
3405	783	180	41	10
4586	00001108	264	63	15
6103	1526	381	95	24
8032	2088	543	00000141	37
00010460	2824	763	206	56
13493	3778	00001058	296	83
17250	5003	1451	421	00000122
21870	6561	1968	590	177
27513	8529	2644	820	238
34360	00010995	3518	00001126	360
42618	14064	4641	1532	505
52523	17858	6072	2064	702

TAB. XL.

x	x^2	x^3	x^4	x^5	x^6
34	1156	039304	01336336	00454354	00154480
35	1225	042875	01500625	00525219	00183827
36	1296	04665~~8~~6	01679616	00604662	00217678
37	1369	050653	01874161	00693440	00256573
38	1444	054872	02085136	00792352	00301094
39	1521	059319	02313441	00902242	00351874
40	1600	064000	02560000	01024000	00409600
41	1681	068921	02825761	01158562	00475010
42	1764	074088	03111696	01306912	00548903
43	1849	079507	03418801	01470084	00632136
44	1936	085184	03748096	01649162	00725631
45	2025	091125	04100625	01845281	00830377
46	2116	097336	04477456	02059630	00947430
47	2209	103823	04879681	02293450	01077922
48	2304	110592	05308416	02548040	01223059
49	2401	117649	05764801	02824752	01384128
50	2500	125000	06250000	03125000	01562500
51	2601	132651	06765201	03452525	01759629
52	2704	140608	07311616	03802040	01977061
53	2809	148877	07890481	04181955	02216436
54	2916	157464	08503056	04591650	02479491
55	3025	166375	09150625	05032844	02768064
56	3136	175616	09834496	05507318	03084098
57	3249	185193	10556001	06016920	03429644
58	3364	195112	11316496	06563568	03806869
59	3481	205379	12117361	07149244	04218054
60	3600	216000	12960000	07776000	04665600
61	3721	226981	13845841	08445963	05151838
62	3844	238328	14776336	09161328	05680024
63	3969	250047	15752961	09924365	06252350
64	4096	262144	16777216	10737418	06871948
65	4225	274625	17850625	11602906	07541889
66	4356	287496	18974736	12523326	08265395
67	4489	300763	20151121	13501251	09045838

TAB. XL.

x^7	x^8	x^9	x^{10}	x^{11}
00052523	00017858	00006072	00002064	00000702
00064339	00022519	00007882	00002759	00000966
00078364	00028211	00010156	00003656	00001316
00094932	00035125	00012996	00004809	00001779
00114416	00043478	00016522	00006278	00002386
00137231	00053520	00020873	00008140	00003175
00163840	00065536	00026214	00010486	00004194
00194754	00079849	00032738	00013423	00005503
00230539	00096827	00040667	00017080	00007174
00271819	00116882	00050259	00021611	00009293
00319278	00140482	00061812	00027197	00011967
00373669	00168151	00075668	00034051	00015823
00435818	00200476	00092219	00042421	00019517
00506623	00238113	00111913	00052599	00024722
00587068	00281793	00135260	00064925	00031164
00678223	00332329	00162842	00079792	00039098
00781250	00390625	00195312	00097656	00048828
00897411	00457679	00233417	00119042	00060712
01028072	00534597	00277991	00144555	00075169
01174711	00622597	00329976	00174887	00092690
01338925	00723020	00390431	00210833	00113850
01522435	00837339	00460537	00253295	00139312
01727095	00967173	00541617	00303306	00169851
01954897	01114291	00635146	00362033	00206359
02207984	01280631	00742766	00430804	00249866
02488652	01468305	00866300	00511117	00301559
02799360	01679616	01007770	00604662	00362797
03142621	01916999	01169369	00713215	00435061
03521615	02183401	01353809	00839361	00520404
03938981	02481558	01563381	00984930	00620506
04398047	02814743	01801436	01152919	00737868
04902228	03186448	02071196	01346271	00875078
05455161	03600406	02376268	01568337	01035102
06060712	04060677	02720653	01822838	01221301

TAB. XL.

x	x^2	x^3	x^4	x^5	x^6
67	4489	300763	20151121	13501251	09045838
68	4624	314432	21381376	14539336	09886748
69	4761	328509	22667121	15640313	10791816
70	4900	343000	24010000	16807000	11764900
71	5041	357911	25411681	18042294	12810028
72	5184	373248	26873856	19349176	13931407
73	5329	389017	28398241	20730716	15133423
74	5476	405224	29986571	22190066	16420649
75	5625	421875	31640625	23730469	17797852
76	5776	438976	33362176	25355254	19269993
77	5929	456533	35153041	27067842	20842238
78	6084	474552	37015056	28871744	22519960
79	6241	493039	38950081	30070564	24308746
80	6400	512000	40960000	32768000	26214400
81	6561	531441	43046721	34867844	28242954
82	6724	551368	45212176	37073984	30400667
83	6889	571787	47458321	39390406	32694037
84	7056	592704	49787136	41821194	35129803
85	7225	614125	52200625	44370531	37714951
86	7396	636056	54700816	47042702	40456724
87	7569	658503	57289761	49842092	43362620
88	7744	681472	59969536	52773192	46440409
89	7921	704969	62742241	55840595	49698130
90	8100	729000	65610000	59049000	53144100
91	8281	753571	68574961	62403215	56786925
92	8464	778688	71639296	65908152	60635500
93	8649	804357	74805201	69568837	64699018
94	8836	830584	78074896	73390402	68986978
95	9025	857375	81450625	77378094	73509189
96	9216	884736	84934656	81537270	78275779
97	9409	912673	88529281	85873403	83297200
98	9604	941192	92236816	90392080	88584238
99	9801	970299	96059601	95099005	94148015
100	10000	1000000	100000000	100000000	100000000

TAB. XL.

x^7	x^8	x^9	x^{10}	x^{11}
06060712	04060677	02720653	01822838	01221301
06722989	04571632	03108710	02113923	01437468
07446353	05137984	03545209	02446194	01687874
08235430	05764801	04035361	02824752	01977327
04095120	06457535	04584850	03255244	02311223
10030613	07222041	05199870	03743906	02695612
11047399	08064601	05887159	04297654	03137265
12151280	08991947	06654041	04923990	03643753
13348389	10011291	07508469	05631351	04223514
14645195	11130347	08459064	06428888	04885955
16048523	12357363	09515169	07326680	05641544
17565569	13701144	10686892	08335776	06501905
19203909	15171088	11985160	09468276	07479938
20971520	16777216	13421773	10737418	08589934
22876792	18530202	15009464	12157665	09847709
24928547	20441408	16761955	13744803	11270738
26564264	22522922	18694026	15516041	12878314
29509035	24787589	20821575	17490123	14691703
32057709	27249050	23161695	19687441	16734325
34579081	29921793	25732742	22130158	19031936
37725479	32821167	28554415	24842341	21612837
40867560	35963452	31647838	27850098	24050809
44231336	39365889	35035641	31181721	27751731
47829690	43046721	38742049	34867844	31381060
51676102	47025253	42792980	38941612	35436867
55784660	51321887	47216136	43438845	39963738
60170087	55958181	52041108	48398231	45010355
64847759	60956894	57299480	53861511	50629821
69833730	66342043	63024941	59873694	56880009
75144748	72138958	69253399	66483263	63823932
80798284	78374336	76023106	73742413	71530140
86812553	85076302	83374776	81707281	80073135
93206535	92274469	91351725	90438207	89533825
100000000	100000000	100000000	100000000	100000000

TAB. XLI.

x	$\sqrt{x}$	x	$\sqrt{x}$	x	$\sqrt{x}$
1	1.0000000	34	5.8309519	67	8.1853528
2	1.4142136	35	5.9160798	68	8.2462112
3	1.7320508	36	6.0000000	69	8.3066239
4	2.0000000	37	6.0827625	70	8.3666003
5	2.2360680	38	6.1644140	71	8.4261498
6	2.4494897	39	6.2449980	72	8.4852814
7	2.6457513	40	6.3245553	73	8.5440037
8	2.8284272	41	6.4031242	74	8.6023253
9	3.0000000	42	6.4807407	75	8.6602540
10	3.1622776	43	6.5574385	76	8.7177979
11	3.3166248	44	6.6332496	77	8.7749644
12	3.4641016	45	6.7082039	78	8.8317609
13	3.6055513	46	6.7823300	79	8.8881944
14	3.7416574	47	6.8556546	80	8.9442719
15	3.8729833	48	6.9282032	81	9.0000000
16	4.0000000	49	7.0000000	82	9.0553851
17	4.1231056	50	7.0710678	83	9.1104335
18	4.2426407	51	7.1414284	84	9.1651514
19	4.3588989	52	7.2111025	85	9.2195445
20	4.4721359	53	7.2801099	86	9.2736185
21	4.5825757	54	7.3484692	87	9.3273791
22	4.6904157	55	7.4161985	88	9.3808315
23	4.7958315	56	7.4833148	89	9.4339811
24	4.8989795	57	7.5498344	90	9.4868330
25	5.0000000	58	7.6157731	91	9.5393920
26	5.0990195	59	7.6811457	92	9.5916630
27	5.1961524	60	7.7459667	93	9.6436507
28	5.2915024	61	7.8102497	94	9.6953597
29	5.3851648	62	7.8740079	95	9.7467943
30	5.4772256	63	7.9372539	96	9.7979590
31	5.5677644	64	8.0000000	97	9.8488578
32	5.6568542	65	8.0622577	98	9.8994949
33	5.7445626	66	8.1240384	99	9.9498744
34	5.8309519	67	8.1853528	100	10.0000000

TAB. XLII.

RADICES QUADRÆTE PROPE VERÆ.

$$\sqrt{2} = \frac{7}{5}, \frac{17}{12}, \frac{41}{29}, \frac{99}{70}, \frac{239}{169}, \frac{577}{408}, \frac{1393}{985}, \frac{3363}{2378}, \frac{8119}{5741}, \text{etc.}$$

$$\sqrt{3} = \frac{7}{4}, \frac{19}{11}, \frac{26}{15}, \frac{71}{41}, \frac{97}{56}, \frac{265}{153}, \frac{362}{209}, \frac{989}{571}, \frac{1351}{780}, \frac{3691}{2131}, \text{etc.}$$

$$\sqrt{4} = 2.$$

$$\sqrt{5} = \frac{9}{4}, \frac{38}{17}, \frac{161}{72}, \frac{682}{305}, \frac{2889}{1292}, \frac{12238}{5473}, \frac{51841}{23184}, \text{etc.}$$

$$\sqrt{6} = \frac{5}{2}, \frac{22}{9}, \frac{49}{20}, \frac{218}{89}, \frac{485}{198}, \frac{2158}{881}, \frac{4801}{1960}, \frac{21362}{8721}, \text{etc.}$$

$$\sqrt{7} = \frac{8}{3}, \frac{37}{14}, \frac{45}{17}, \frac{82}{31}, \frac{127}{48}, \frac{590}{223}, \frac{717}{217}, \frac{1307}{494}, \frac{2024}{765}, \text{etc.}$$

$$\sqrt{8} = \frac{14}{5}, \frac{17}{6}, \frac{82}{29}, \frac{99}{35}, \frac{478}{169}, \frac{577}{204}, \frac{2786}{985}, \frac{3363}{1189}, \text{etc.}$$

$$\sqrt{9} = 3.$$

$$\sqrt{10} = \frac{19}{6}, \frac{117}{37}, \frac{721}{228}, \frac{4443}{1405}, \frac{27379}{8658}, \text{etc.}$$

$$\sqrt{11} = \frac{10}{3}, \frac{63}{19}, \frac{199}{60}, \frac{1257}{379}, \frac{3970}{1197}, \frac{25077}{7561}, \text{etc.}$$

$$\sqrt{12} = \frac{7}{2}, \frac{45}{13}, \frac{97}{28}, \frac{627}{181}, \frac{1351}{390}, \frac{8733}{2521}, \text{etc.}$$

TAB. XLIII.

$$\sqrt{\frac{1}{a}} = \frac{1}{a}\sqrt{a}$$

$$\sqrt{\frac{a}{b}} = \frac{1}{b}\sqrt{ab}$$

$$x^4 - ax^2 + bb = 0$$

$$x = \sqrt{\left(\frac{a+2b}{4}\right)} \pm \sqrt{\left(\frac{a-2b}{4}\right)}.$$

$$\sqrt{(a \pm \sqrt{b})} = \sqrt{\frac{a+\sqrt{(aa-b)}}{2}} \pm \sqrt{\frac{a-\sqrt{(aa-b)}}{2}}$$

$$\sqrt{(a \pm \sqrt{-b})} = \sqrt{\frac{a+\sqrt{(aa+b)}}{2}} \pm \sqrt{\frac{a-\sqrt{(aa+b)}}{2}}$$

TAB. XLIV.

Coefficientes terminorum ſeriei.

$$\sqrt{(1+x)} = 1 + \frac{1}{2}x - \frac{1}{2}\cdot\frac{1}{4}x^2 + \frac{1}{2}\cdot\frac{1}{4}\cdot\frac{3}{6}x^3 - \text{etc.}$$

$\frac{1}{2}$	=	0,5				
$\frac{1}{2}\cdot\frac{1}{4}$	=	0,125				
$\frac{1}{2}\cdot\frac{1}{4}\cdot\frac{3}{6}$	=	0,0625				
$\frac{1}{2}\cdot\frac{1}{4}\cdot\frac{3}{6}\cdot\frac{5}{8}$	=	0,039062	5			
$\frac{1}{2}\cdot\frac{1}{4}\cdots\frac{7}{10}$	=	0,027343	75			
$\frac{1}{2}\cdot\frac{1}{4}\cdots\frac{9}{12}$	=	0,020507	8125			
$\frac{1}{2}\cdot\frac{1}{4}\cdots\frac{11}{14}$	=	0,016113	28125			
$\frac{1}{2}\cdot\frac{1}{4}\cdots\frac{13}{16}$	=	0,013092	041015	625		
$\frac{1}{2}\cdot\frac{1}{4}\cdots\frac{15}{18}$	=	0,010910	034179	6875		
$\frac{1}{2}\cdot\frac{1}{4}\cdots\frac{17}{20}$	=	0,009273	529052	734375		
$\frac{1}{2}\cdot\frac{1}{4}\cdots\frac{19}{22}$	=	0,008008	956909	179687	5	
$\frac{1}{2}\cdot\frac{1}{4}\cdots\frac{21}{24}$	=	0,007007	837295	532226	5625	
$\frac{1}{2}\cdot\frac{1}{4}\cdots\frac{23}{26}$	=	0,006199	240684	509277	34375	
$\frac{1}{2}\cdot\frac{1}{4}\cdots\frac{25}{28}$	=	0,005535	036325	454711	914062	5
$\frac{1}{2}\cdot\frac{1}{4}\cdots\frac{27}{30}$	=	0,004981	532692	909240	722656	25

Coefficientes terminorum ſeriei.

$$1 : \sqrt{(1+x)} = 1 - \frac{1}{2}x + \frac{1}{2}\cdot\frac{3}{4}x^2 - \frac{1}{2}\cdot\frac{3}{4}\cdot\frac{5}{6}x^3 + \text{etc.}$$

$\frac{1}{2}$	=	0,5				
$\frac{1}{2}\cdot\frac{3}{4}$	=	0,375				
$\frac{1}{2}\cdot\frac{3}{4}\cdot\frac{5}{6}$	=	0,3125				
$\frac{1}{2}\cdot\frac{3}{4}\cdot\frac{5}{6}\cdot\frac{7}{8}$	=	0,273437	5			
$\frac{1}{2}\cdot\frac{3}{4}\cdots\frac{9}{10}$	=	0,246093	75			
$\frac{1}{2}\cdot\frac{3}{4}\cdots\frac{11}{12}$	=	0,225585	9375			
$\frac{1}{2}\cdot\frac{3}{4}\cdots\frac{13}{14}$	=	0,209472	65625			
$\frac{1}{2}\cdot\frac{3}{4}\cdots\frac{15}{16}$	=	0,196380	615234	375		
$\frac{1}{2}\cdot\frac{3}{4}\cdots\frac{17}{18}$	=	0,185470	581054	6875		
$\frac{1}{2}\cdot\frac{3}{4}\cdots\frac{19}{20}$	=	0,176197	052001	953125		
$\frac{1}{2}\cdot\frac{3}{4}\cdots\frac{21}{22}$	=	0,168188	095092	773437	5	
$\frac{1}{2}\cdot\frac{3}{4}\cdots\frac{23}{24}$	=	0,161180	257797	241210	9375	
$\frac{1}{2}\cdot\frac{3}{4}\cdots\frac{25}{26}$	=	0,154981	017112	731933	59375	
$\frac{1}{2}\cdot\frac{3}{4}\cdots\frac{27}{28}$	=	0,149445	980787	277221	679687	5
$\frac{1}{2}\cdot\frac{3}{4}\cdots\frac{29}{30}$	=	0,144464	448094	367980	957031	25

PRO NOTICIA.

Status, in quo me collocaverant quidam Scientiarum Cultores hujus loci, fecerant mihi poteſtatem, ea, quæ 20 abhinc annis, et ſic deinceps per intervalla, ſine ſpe exequendi præmeditatus eram de legibus numerorum partim reconditis, partim ad formas ſolitarias reſtrictis, ſumma proprietatum ſeſe excipientium ubertate ac generalitate vix non penitus conſummandi. Quare ne ea, quæ in Præfatione Interpretis de *meſſe ditiſſima* et *maturrima* etc. dicta ſunt, præter modum aſſerta videantur, exponam hic præcipua objecta, partim recognita ab Eruditis, partim examini actu expoſita. Hæc ſunt:

1 *Clavis Factorum* pro aſſignandis Diviſoribus numerorum in nullis Tabulis contentorum infra 24,600.000.

Illius Compendium usque ad 3,096.000 ad eam formam reductum eſt, ut 13 plagulis in quarto majori exhiberi poſſit: cum methodo, hæc ſubſidia in ſpatio unius plagulæ paucis horis ad terminos 1,536.000 unitibus ulteriores, etc. extendendi.

2 *Fractiones omnium numerorum* intra 1 et $\frac{1}{200}$, in duo ſyſtemata digeſtæ, quorum *primum* ſervit datis *fractionibus communibus* immediate *reducendis in decimales*, ad quotcumque loca decimalia.

Secundum ſiſtit omnes haſce fractiones ordinatas *ſecundum incrementum valoris* ſui, aſſignans ita *cujusvis fractionis decimalis fractionem naturalem* ſeu communem proxime æqualem, cujus denominator non excedit 200; et in alia conſideratione omnes numerorum rationes intra hos terminos, etc.

Hæc Tabula prope 12300 terminos *bis* continens in 30 plagulis, reducto compendio intra 1 et $\frac{1}{60}$ ad 11 partem recidens, tribus adeo foliis comprehendi poterit; expoſitis ſimul *legibus Logarithmicis* fractionibus periodicis propriis, etc.

3. Quæ cum potiſſimum confecta ſint numerorum naturalium juxta ſe poſitione, nata eſt *Tabula* quædam *triangularis*, quæ reductis omnibus fractionibus intra 1 et $\frac{1}{200}$ ad minimam expreſſionem, characteribus immutabilibus, ſummeque ſymmetricis, determinat innumeras leges et rationes numerorum ſucceſſivas etc. uno intuitu. Unde nomen *Typi numerorum naturalium* nacta eſt. Quæ cum quovis termino abrumpi poſſit, omnis compendii capax eſt.

4. Hujus formæ (n.° 3.) natura et conſideratio originem dedit inſtrumento cuidam ſimpliciſſimo pro *dimenſionibus ac proportionibus Geometricis* etc. modo facillimo peragendis. Cujus in gratiam computata eſt *Micrometria Trianguli æquilateri*, ſerviens huic figuræ omnium figurarum ſimpliciſſimæ ac ſolidiſſimæ, aliisque Triangulis eodem modo, ut Trigonometria circulo; computatis lateribus in partibus bis milleſimis, angulisque omni conſideratione correſpondentibus.

Hoc quoque Opus vix implens quartam partem Tabularum trigonometricarum, ad decimam porro partem reductum, omnem, dimenſionibus extremam accurationem non repetentibus, conciliabit facilitatem.

5. Opus bipartitum continens in *prima* parte *Periodos generales completas* (id eſt pro omnibus terminis usque $p - 1$) *omnium numerorum primorum* p infra 1000 ita expoſitas, ut ex quovis termino $(2, 3 \,.\,.\, n \,.\,.\, p-1)$ conſpecto immediate determinentur leges huic termino relate ad p ſuosque terminos ſocios $(2, 3 \,.\,.\, n$ etc.) communes, etc.

In parte *ſecunda* exponuntur *fractiones ſpeciales decimales periodicæ*, cuique numeratori infra p, pq (id eſt denominatorum tam primorum quam compoſitorum) propriæ, eo compendio, ut quævis nota decimalis reſpondens certæ ſtationi non niſi ſemel occurrat, cunctisque numeratoribus in eadem ſerie occurrentibus ſemel pro ſemper inſerviat.

Quod compendium quamvis ſalva partium integritate porro contrahi nequeat, tamen reſtrictum ad unam alteramve centuriam ad X. aut XXV. partem voluminis recidet, quod nunc integrum 30 plagulas ſcriptas excedit.

Quibus legibus ad formam magis practicam jam redactis, ſuperſederi poterit multis ambagibus, quibus ante definitionem legum periodorum (jam *univerſalium*) ad eas deventum eſt; præſertim illis, quæ ad unicum *Syſtema particulare decadicum* reſtrictæ 30 fere abhinc annis et adhuc poſtea ingentia volumina impleverunt.

Hæc, inquam, Opera pro uſu Mathematicorum accommodatiſſimo parata ſunt. Cumque ſingulorum compendia ſimul ſumpta longe infra duo Alphabeta formæ deſcriptæ reprimi poſſint; nihil jam ſupereſt, quam ut votis majoribus definiatur, quo termino in quovis horum objectorum in ſumma facile 6 Alphabeta excedentium abrumpendum ſit, ut hæc nova ſupellex, paucis immenſa comprehendens, methodo magis naturali quam ſcholaſtica ex vinculis ſuis extorta, in manus omnium venire poſſit, qui qualitatum numericarum, expreſſionibus ſolitariis non obtemperantium, fontibus delectantur.

Fidelis Inſtituto dictorum Eruditorum, quod eſt prodeſſe, et meo propoſito, quod erat, conſummare quasdam meditationes meorum contemporaneorum operoſiſſimas, *ſpecialitate* ſua excluſas ab uſu magis communi; non acquieſco, eas ea *generalitate*, cujus tantum *Numeri* (qua tales) capaces ſunt, et eo *Compendio*, quod *Omnia* (terminis ſuis propria) continet, ad eam perduxiſſe *amplitudinem*, ut vel ſumma petentibus ſufficiant: ſed jam occupatus ſum, formando compendia omnium generum, ut quam primum prodire poſſint in Publicum; aut ſi huic determinationi quidquam obſtiterit, Copiæ fideles exhiberi poſſint ſcientiarum Cultoribus, eas ſub juſtis conditionibus deſiderantibus.

CATALOGO

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Eſtaõ debaixo do prélo as ſeguintes:

Memorias de Mathematica e Fyſica da Academia Real das Sciencias, Tom. 2.°
Taboadas Perpétuas Aſtronomicas para uſo da Navegaçaõ Portugueza.
Memorias para ſervir á Hiſtoria das Nações Ultramarinas.
Memorias Economicas Tom. 4.°

Vendem-ſe em Lisboa *na loja de* Bertrand; *e em* Coimbra, *e no* Porto *tambem pelos meſmos preços.*

ERRATA.

Emendatis ultra 130 erroribus tum typi, tum calculi in originali Lambertino, aſſignatis pro illis, quorum intereſt, ſequentes ſerius repertos, et in poſterioribus tantum exemplaribus emendatos, ne calculum turbent, reſpicere et prævie emendare juverit.

Pag.	16	Num.	21409	Ponatur	79	pro	97
	21	...	29377	...	29	...	19
	38	...	54931	...	163	...	167
	48	...	69443	...	11 s	...	17 s
	51	...	72299	...	197	...	97
	60	...	89179	...	257	...	157
	65	...	94973	...	73	....	37

98 ponatur numerus prim. 78571 pro 78579.

139 lin. 15 $\sqrt[3]{\frac{\pi}{6}} =$ in fine ponatur .. 234820 &c. pro 224820 &c.

141 lin. 7 ponatur 109682 pro 109782.

148 ſecans 85° ponatur 114737132 pro 114737312.

148 log. tang. 87° ponatur 11.2806042 pro 11.2809042.

174 437^2 ponatur 190969 pro 190961

174 451^2 .... 203401 ... 203404

175 767^2 .... 588289 ... 508289.

177 995^2 .... 990025 ... 980025.

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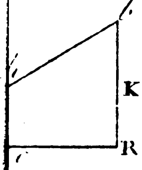
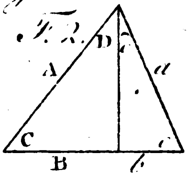


F. 2.



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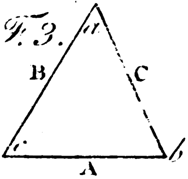

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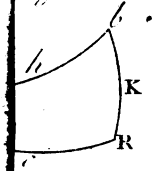

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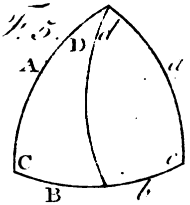

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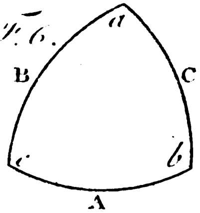

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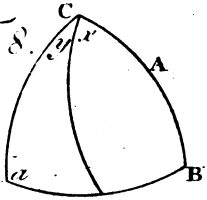
F. 8.



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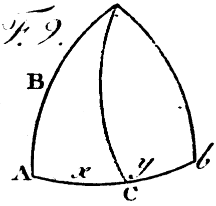

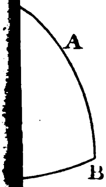

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