

Index to *MTAC* III: 21-28

1948-1949

The Indices for this volume bring together references to all Articles, RMT, MTE, U, ACM, OAC, N, Q, QR, Corrigenda, Subjects, and Names. Mrs. D. H. LEHMER has more continued her labor of love by preparing the Subject Index, and for this we are grateful. Our octogenarian friend, S.A.J., again has paid special attention to ind Errata but his notable contribution here and in connection with the whole Index Se is but a tiny fraction of what he has done towards making the volume as a whole worthy of publication.

HEADINGS FOR INDICES

Numbers issued	Automatic Computing Machinery
Articles	Other Aids to Computation
Recent Mathematical Tables	Notes
Corrigenda	Portraits
Mathematical Tables—Errata	Queries
Mathematical Tables—Errata, Author	Queries—Replies
Index	Subject Index
Unpublished Mathematical Tables	Name Index

NUMBERS ISSUED

21, 1948, Jan. (1-68); 22, April (69-148); 23, July (149-228); 24, Oct. (229-332); 25, Jan. (333-398); 26, Apr. (399-452); 27, July (453-500); 28, Oct. (501-596).

ARTICLES

- F. L. Alt, A Bell Telephone Laboratories' computing machine, 1-13, 69-84
- J. Laderman, The square root method for solving simultaneous linear equations, 13-1
- H. E. Salzer, Coefficients for expressing the first twenty-four powers in terms of the Legendre polynomials, 16-18
- D. F. Ferguson & J. W. Wrench, Jr., A new approximation to π (conclusion), 18-19
- W. J. Eckert, The IBM pluggable sequence relay calculator, 149-161
- H. F. Mitchell, Jr., Inversion of a matrix of order 38, 161-166
- H. E. Salzer, Coefficients for expressing the first thirty powers in terms of the Legendre polynomials, 167-169
- A. Fletcher, Guide to tables of elliptic functions, 229-281
- A. V. Haeff, The memory tube and its application to electronic computation, 281-286
- R. M. Bloch, R. V. D. Campbell & M. Ellis, The logical design of the Raytheon computer, 286-295
- J. C. P. Miller, The BAASMTC now RSMTC, 333-340
- F. E. Snyder & H. M. Livingston, Coding of a Laplace boundary value problem for the UNIVAC, 341-350
- A. Hillman & I. Sherman, Complex zeros of $Y_0(z)$, $Y_1(z)$, and $Y_1'(z)$, 351-352
- G. W. King, A method of plotting on standard IBM equipment, 352-355
- R. A. Fairthorne & J. C. P. Miller, Hilbert's double series theorem and principal roots of the resulting matrix, 399-400
- J. O. Harrison, Jr., Piecewise polynomial approximation for large-scale digital calculation, 400-407
- H. E. Stelson, The accuracy of linear interpolation in tables of the mathematics of functions, 408-412

F. M. Verzuh, The solution of simultaneous linear equations with the aid of the 602 calculating punch, 453-462

G. D. McCANN, The California Institute of Technology electric analogue computer, 501-513

RECENT MATHEMATICAL TABLES

Reviews by numbers, authors, pages. There is no number 607

450 (Mitchell) 19; 451 (Schulze) 19-20; 452 (Müller & Rajna) 20; 453 (Prokeš) 20-21; 454 (Kulikov) 21; 455 (Wijngaarden) 21; 456-457 (Gloden) 21-22; 458 (Gupta) 22-23; 459 (Lahiri) 23; 460 (Mahler) 23; 461 (Robert) 23; 462 (Walfisz) 24; 463 (Ziaud-Din, Kerawala, Kerawala & Hanafi) 24; 464-465 (NBSCL) 25-26; 466 (Reiz) 26; 467 (King) 27-29; 468 (Freeman) 29; 469 (Hage) 29-30; 470 (Ebsen) 31; 471 (Germany, Deutsche Seewarte) 31-32; 472 (Germany, Reichsluftfahrtministerium) 32-34; 473 (U. S. Hydrogr. Off.) 34-36; 474 (Emmons) 36-37; 475 (MIT) 37-40; 476 (Barlow) 84; 477 (Cazzola) 84-85; 478 (Gauss) 85-86; 479 (Comrie) 86-87; 480 (Levallois) 87; 481 (Gloden & Bonneau) 87; 482 (Cracknell) 87; 483 (Rohrer) 88; 484 (NBSCL) 88-89; 485 (Spenceley & Spenceley) 89-92; 486 (Anan'ev) 93; 487 (Marchisio) 93-94; 488 (Great Britain, Naut. Alm. Off.) 94-95; 489 (Duarte) 95; 490 (Ferrier) 95; 491 (Gloden) 96; 492 (Pipping) 96; 493 (Yarden) 96-97; 494 (Zavrotsky) 97; 495 (Salzer) 97-98; 496 (Kelley) 98; 497 (Palm) 98-99; 498 (Blewett) 99; 499 (Bouwkamp) 99-101; 500 (Charney) 102; 501 (Harvard Univ., Comput. Lab.) 102; 502 (Kober) 103; 503 (Magnus & Oberhettinger) 103-105; 504 (Morgan) 105-107; 505 (NBSCL) 107; 506 (U. S. Navy, Off. Res. & Inventions) 107; 507 (Salzer) 107-108; 508 (Dorodniĭsyn) 108; 509 (Placzek) 108; 510 (Skinner-Truscott) 108; 511 (T̄sukhanova & Salamandra) 109; 512 (Khristianovich) 109; 513 (Deutsche Seewarte) 109-110; 514 (Japan, Hydrogr. Dept.) 110-112; 515 (Kopal) 112-114; 516 (Rodrigues) 114-115; 517 (Hickerson) 115-116; 518 (Moretti) 116; 519 (Sachs) 169-170; 520 (Stewart) 170; 521 (Lambert) 170-172; 522 (Peters) 172; 523 (Bosshardt) 172-173; 524 (NBSCL) 173; 525-526 (Rybnér) 173-175; 527 (Moon) 175-176; 528 (Beeger) 176; 529 (Kraitchik) 177; 530 (Lahiri) 177; 531 (Pettit) 178; 532 (Carslaw & Jaeger) 178; 533 (Bell Tel. Labs.) 179; 534 (Charlier) 180; 535 (Cambi) 180-181; 536 (Campbell & Foster) 181-183; 537 (Doetsch) 183-184; 538 (Gray, Merwin & Brainerd) 184-185; 539 (Harvard Univ., Comput. Lab.) 185-186; 540 (Kuzneĭsev) 186; 541 (Lane & Sweeney) 186; 542-543 (NBSCL) 187-188; 544 (King) 188; 545 (MacLane) 188; 546 (Pollard & Present) 188; 547 (Irwin) 189-191; 548 (T̄sesevich) 191-195; 549-550 (Japan, Hydrogr. Off.) 195-197; 551 (MIT) 197-198; 552 (Nat. Adv. Comm. for Aeronautics) 199; 553 (Ellis & Walsh) 296; 554 (Gifford) 296-298; 555 (Gloden) 298; 556 (Gupta) 298; 557 (Yarden & Katz) 299; 558 (Akad. N., Matem. Institut) 299; 559 (Birge) 300; 560 (Jackman) 301; 561 (Kelley) 301-302; 562 (Nielsen & Goldstein) 302-303; 563 (Bennett) 303; 564 (Bouwkamp) 303-304; 565 (Cambi) 304-305; 566 (Dwight) 305-306; 567 (Gray & Schelkunoff) 306; 568 (Kaplan) 306-307; 569 (Kourganoff) 307; 570 (Rice) 307-308; 571 (Tietze) 308; 572 (Rice) 308; 573 (Thomas) 308; 574 (Peake) 308-309; 575 (France, Service Technique Aéronautique) 309-311; 576 (Japan, Hydrogr. Off.) 311; 577 (Harvard Univ., Comput. Lab.) 311-314; 578 (Schomann) 355; 579 (Uhler) 355; 580 (France, Inst. Géogr. National) 355-356; 581 (Beall) 356; 582 (Italy, Consiglio Naz. d. Ricerche) 356; 583 (Jordan) 356-357; 584 (Karîkin) 357; 585 (Anon.) 357; 586 (Gloden) 357; 587 (Kraitchik) 357-358; 588 (Salzer) 358; 589 (Lienard) 358; 590 (Finney) 359; 591 (Finney & Stevens) 359-360; 592 (Fisher & Yates) 360-361; 593 (Japan, Hydrogr. Dept.) 361-362; 594 (Mainland) 362-363; 595 (Nair) 363-364; 596 (Emde) 364-366; 597 (Bordoni) 366-367; 598 (Great Britain, ACS) 367; 599 (Harvard Univ., Comput. Lab.) 367; 600 (Kitover) 368; 601 (Kober) 368; 602 (Magnus & Oberhettinger) 368-369; 603 (Yuan) 369; 604 (Lecolazet & Pluvillage) 369; 605 (Ugarov) 369; 606 (Guldhammer) 369-371; 608 (Goldschmidt & Pitt) 412; 609 (Zimmermann) 412-413; 610 (Donnay & Hamburger) 413; 611 (Robbins & Smith) 414; 612 (Kerawala & Hanafi) 414; 613 (Salzer) 414-415; 614 (Woodward) 415; 615 (Bose) 415; 616 (Collie, Hasted & Ritson) 415; 617 (Ghizzetti) 415-416; 618 (Goldman) 416; 619 (Greenwood & Miller) 416; 620

(U. S. Navy, Naval Res. Lab.) 417; **621** (Jaeger) 417; **622** (Zubkov) 417; **623** (Bullard & Cooper) 417-418; **624** (Hay & Gamble) 418; **625** (Herget) 418-419; **626** (Italy, Istituto Idrogr. d. r. Marina) 419-420; **627** (Lapushkin) 420-422; **628** (Merritt) 462; **629** (Mitrinovich) 463; **630** (Sassenfeld & Tschunko) 463; **631** (Comrie) 464-466; **632** (Larsen) 466; **633** (Boll) 466-467; **634** (Wittke) 467; **635** (Vega) 467; **636** (Watson) 468; **637** (Milne) 468-472; **638** (Westberg) 472; **639** (Salzer) 472-473; **640** (Copsey, Frazer & Sawyer) 473; **641** (Kopal) 473; **642** (Rosser) 474; **643** (Deschodt) 474; **644** (Harvard Univ., Comput. Lab.) 474-475; **645** (Macfarlane) 475-477; **646** (Mitchell) 477; **647** (NBSCL) 477-478; **648** (NBSINA) 478; **649** (Stankiewicz) 479; **650** (Arenberg & Levin) 479; **651** (Harvard Univ., Comput. Lab.) 479-482; **652** (Schelkunoff) 482; **653** (Godfrey) 482; **654** (Gröbner & Hofreiter) 482; **655** (Goodwin & Staton) 483; **656** (Stevenson) 483; **657** (NBSCL) 483-484; **658** (Italy, Istituto Idrografico) 513; **659** (Dale) 514; **660** (Sainte-Lagüe) 514; **661** (Danjon) 514-515; **662** (NBSCL) 515-516; **663** (Huskey & Hartree) 516; **664** (Rybner & Sørensen) 516-517; **665** (Harvard Univ., Comput. Lab.) 517-518; **666-667** (Lehmer) 518-519; **668** (Pipping) 519; **669** (Yarden & Katz) 519; **670** (Salzer) 519; **671** (Jeffreys) 519-520; **672** (Smirnov) 520; **673** (Marcum) 521; **674** (Grover) 521; **675** (Hartree & Johnston) 521; **676** (Huckel) 522; **677** (Lowan & Horenstein) 522; **678** (Magnus & Oberhettinger) 522-523; **679** (NBSCL) 523-524; **680** (Bouwkamp) 524; **681** (Levine & Schwinger) 524; **682** (Meixner) 524-526; **683** (Hallén) 526; **684** (LeCaine) 526; **685** (Van de Hulst) 526-527; **686** (Financial Publ. Co.) 527-528; **687** (Italy, Istituto Geogr. Militare) 528-529; **688** (Hoehne) 529; **689** (Azeredo Rodrigues) 529-531; **690** (Sadler) 531.

CORRIGENDA

P. 67, 147, 227, 332, 398, 452, 499, 563.

MATHEMATICAL TABLES—ERRATA

118 (Gudermann) 40-41; **119** (Harvard Univ., Comput. Lab.) 41; **120** (Jahnke & Emde) 41; **121** (Koshliakov) 41-42; **122** (Spence) 42; **123** (Wrench) 42; **also** Columbia Univ. Press 26, Hage 30, Hayashi 42, Jørgensen 62, Kerawala & Hanafi, 24, King 29, Müller, Rajna & Gabba 20, MIT 38-39, NBSCL 25, Prokeš 20, Reiz 26, Schulze 20, U. S. Hydrogr. Off. 35, Wrench 18-19, Ziaud-Din 24; **124** (Airey) 116-118; **125** (Gloden) 118; **126** (Walther) 119; **127** (Yarden) 119-120; **also** Ageton 145, Anan'ev 93, Bouwkamp 100, Cazzola 84-85, Chebyshev 97-98, Editor 84, l. -5, -6, 106, l. 19-20, Ferrier 95, Fontoura & Penteadó 145, Germany, Deutsche Seewarte 138-140, Great Britain, N. A. O. 95, Magnus & Oberhettinger 104-105, NBSCL 88-89, Skinner (Truscott) 108, U. S. Navy 107, Whittaker & Robinson 98; **128** (Airey) 199, **129** (Becker & Van Orstrand) 200-201, **130-131** (Dwight) 201; **132** (Gauss) 201-203, **133** (NBSCL) 203; **134** (Okaya) 203; **135-137** (Peters) 203-205; **also** Cajori 224, Cambi 181, Doetsch 183, Felkel 171, Ferrari 194, Kraitchik 177, Lambert 171-172, Lane & Sweeney 186, Lehmer 227, Moon 175, Peters 172, Pettit 178, Russell & Shapley 192, Rybner 174, T̄sesevich 193; **138** (Adams) 314; **139** (Comrie) 314; **140** (Hardy & Wright) 314; **141** (Jahnke & Emde) 314-315; **142** (NBSCL) 315; **143** (Peters) 315; **144** (U. S. Hydrogr. Off.) 315-316; **also** Airey 261, Akushskii & Ditkin 299, Bertrand 261-262, Dale 262, DeMorgan 308, Ditkin 299, Dwight 262, FMR 276-277, France 309, Gauss 262, Gifford 297, Glaisher 263, Gosset 263, Greenhill 263, Hammer 308, Hancock 263, Harvard Univ., Comput. Lab. 313, Hayashi 263-266, Heuman 266, Hippisley 266-267, Innes 266-267, Jahnke & Emde 267-268, Legendre 268-274, Lévy 274-275, L̄usternik 299, Loxhay 280, Meissel 275-276, Merfield 269, Moore 276, Nagaoka & Sakurai 276, Pearson 306-307, Plana 277-278, Potin 278, Rosenbach, Whitman & Moskovitz 278, Runkle 278, Samoilova-ĭakhontova 278-279, Schlömilch 279, Soldner 308, Spenceley 280, Verhulst 280-281, Wayne 281, Weigand 308, Yarden & Katz 299; **145** (Becker & Van Orstrand) 371; **146** (Fisher) 371; **147** (Kraitchik) 372; **148** (Oughtred) 372; **also** France, Inst. Géog. Nat. 356, Guldhammer 371, Jahnke & Emde 365-366, Kariākin 357, Pitiscus 391-392, Rheticus 395-396, Ugarov 369, Uhler 355; **149** (Adams) 423; **150** (Glazepan) 423;

151 (Jahnke & Emde) 423; **152** (Kelley) 423; **153** (Richmond) 423-424; **154** (BAASMTc) 424; **155** (U. S. Coast and Geod. Survey) 424-425; **also** Bertrand 449, Buckingham 413, Callet 426, Davis 424, Davis & Kirkham 450, Goldman 416, Gray & Mathews 449-450, Hay & Gamble 418, Herget 419, Kerawala & Hanafi 414, Lapushkin 422, Meissel 449-450, U. S. Navy 417, Zimmermann 412; **156** (Holtappel) 485; **157** (Kelley) 485; **158** (Pearson) 485; **159** (U. S. Coast and Geod. Survey) 485; **also** Boll 466-467, Cunningham 486, Hacker 493, NBSINA 478, Newman 477, Powell 477, Seewald 472; **160** (D. H. Lehmer) 531; **161** (D. N. Lehmer) 531-532; **also** Boll 518, Bouwkamp 525, Briggs 516, Dale 514, Feller 520, FMR 551, Gauss 551, Hallén 526, Huckel 522; Lehmer 518-519; Magnus & Oberhettinger 523, Meixner 525, Rheticus 556-557, Watson 549-550.

MATHEMATICAL TABLES—ERRATA, AUTHOR INDEX

- | | |
|------------------------------------|--|
| Adams 314, 423 | Gloden 118 |
| Ageton 145 | Goldman 416 |
| Airey 116-118, 199, 261 | Gossot 263 |
| Akushskii & Ditkin 299 | Gray & Mathews 449-450 |
| Anan'ev 93 | Great Britain, N.A.O. 95 |
| Becker & Van Orstrand 200-201, 371 | Greenhill 263 |
| Bertrand 261-262, 449 | Gudermann 40-41 |
| Boll 466-467, 518 | Guldhammer 371 |
| Bouwkamp 100, 525 | Hacker 493 |
| Brandenburg 43 | Hage 30 |
| BAASMTc 424 | Hallén 526 |
| Briggs 516 | Hammer 308 |
| Buckingham 413 | Hancock 263 |
| Cajori 224 | Hardy & Wright 314 |
| Callet 426 | Harvard Univ., Comput. Lab. 41, 313 |
| Cambi 181 | Hay & Gamble 418 |
| Cazzola 84-85 | Hayashi 42, 263-266 |
| Chebyshev 97-98 | Herget 419 |
| Columbia Univ. Press 26 | Heuman 266 |
| Comrie 314 | Hippisley 266-267 |
| Cunningham 486 | Holtappel 485 |
| Dale 262, 514 | Huckel 522 |
| Davis 424 | Innes 266-267 |
| Davis & Kirkham 450 | Jahnke & Emde 41, 267-268, 314-315, 365-366, 423 |
| DeMorgan 308 | Jørgensen 62 |
| Ditkin 299 | Kariākin 357 |
| Doetsch 183 | Kelley 423, 485 |
| Dwight 201, 262 | Kerawala & Hanafi 24, 414 |
| Editor 84, 106 | King 29 |
| Felkel 171 | Koshliākov 41-42 |
| Feller 520 | Kraitichik 177, 372 |
| Ferrari 194 | Lambert 171-172 |
| Ferrier 95 | Lane & Sweeney 186 |
| Fisher 371 | Lapushkin 422 |
| FMR 276-277, 551 | Legendre 268-274, 306-307 |
| Fontoura & Penteado 145 | Lehmer, D. H. 227, 518-519, 531 |
| France 309, 356 | Lehmer, D. N. 531-532 |
| Gauss 201-203, 262, 551 | Lévy 274-275 |
| Germany, Deutsche Seewarte 138-140 | Liūsternik 299 |
| Gifford 297 | Loxhay 280 |
| Glaisher 263 | Magnus & Oberhettinger 104-105, 523 |
| Glazenap 423 | |

- MIT 38-39
 Meissel 275-276, 449-450
 Meixner 525
 Merfield 269
 Moon 175
 Moore 276
 Müller, Rajna & Gabba 20
 Nagaoka & Sakurai 276
 NBSCL 25, 88-89, 203, 315
 NBSINA 478
 Newman 477
 Okaya 203
 Oughtred 372
 Pearson 306-307, 485
 Peters 172, 203-205, 315
 Pettit 178
 Pitiscus 391-392
 Plana 277-278
 Potin 278
 Powell 477
 Prokeš 20
 Reiz 26
 Rheticus 395-396, 556-557
 Richmond 423-424
 Rosenbach, Whitman, & Moskovitz 278
 Runkle 278
 Russell & Shapley 192
 Rybner 174
 Samoïlova-ĭakhontova 278-279
 Schlömilch 279
 Schulze 20
 Seewald 472
 Skinner (Truscott) 108
 Soldner 308
 Spence 42
 Spenceley 280
 T̄sesevich 193
 Ugarov 369
 Uhler 355
 U. S. Coast & Geod. Survey 424-425, 485
 U. S. Hydrogr. Off. 35, 315-316
 U. S. Navy 107, 417
 Verhulst 280-281
 Walther 119
 Watson 549-550
 Wayne 281
 Weigand 308
 Whittaker & Robinson 98
 Wrench 18-19, 42
 Yarden 119-120
 Yarden & Katz 299
 Ziaud-Din 24
 Zimmermann 412

UNPUBLISHED MATHEMATICAL TABLES

There is no number 66

63 (Wrench) 42-43; 64 (Porter) 43; 65 (NBSCL) 43-44; 67 (Poulet) 120; 68 (Salzer) 120-121; 69 (Salzer) 205; 70 (Spenceley) 205; 71 (Salzer) 205-206; 72 (Salzer) 316; 73 (Dixon) 316-317; 74 (Salzer) 317; 75 (Univ. California, Statist. Lab.) 372-373; 76 (Faucher) 425; 77 (Bower) 425-426; 78 (Greenwood) 426; 79 (Bartol Res. Foundation) 485; 80-81 (Gloden) 486; 82 (Poletti) 532; 83 (Salzer) 532.

AUTOMATIC COMPUTING MACHINERY

Technical Developments: See under Articles, Alt; Bloch, Campbell & Ellis; Eckert; Haeff; Harrison & Malone; McCann; Snyder & Livingston; Verzuh.

Discussions: S. Lubkin, Decimal point location in computing machines, 44-50; J. L. McPherson, Applications of large-scale high-speed computing machines to statistical work, 121-126; H. F. Mitchell, Jr., Inversion of a matrix of order 38, 161-166 [also as an Article]; R. F. Clippinger, Airflow problem planned for the ENIAC, 206-207; B. L. Hicks & H. G. Landau, Nonlinear parabolic equations, 207-208; J. V. Holberton, Laminar boundary layer flow in a compressible fluid, 208; J. H. Levin, On the approximate solution of a partial differential equation on the differential analyzer, 208-209; M. Lotkin, Computation of the airflow about a cone cylinder, 209-210; R. M. Bloch, R. V. D. Campbell & M. Ellis, General design considerations for the Raytheon computer, 317-323; Dorrit Hoffleit, A comparison of various computing machines used in the reduction of Doppler observations, 373-377; Florence Koons & S. Lubkin, Conversion of numbers from decimal to binary form in the EDVAC, 427-431; E. F. Moore, A new general method for finding roots of polynomial equations, 486-488; J. L. Meriam, Procedure for the machine or nu-

merical solution of ordinary linear differential equations for two-point linear boundary values, 532-539.

Bibliography: Burks, Goldstine & Neumann; Comrie; Goldstine & Neumann; Hartree, 50-57. Anon.; Burks, Goldstine & Neumann; Cesareo; Hartree; Juley; Moore School of Electr. Engineering, 126-132. Aiken & Hopper; Anon.; Berkeley; Burks; Comrie; Condon; Curry & Wyatt; Koehler; Russo; Seeber; Lilley; Tjänste; Tumbleson, 210-213. Burks; Djure & Welin; Goldstine; Great Britain, Post Office Dept.; Huskey; IBM, 323-326. Aiken & Hopper; Anon.; Bigelow, Pomerene, Slutz & Ware; Couffignal; Haeff; Lion; Moore School Electr. Engin.; Inst. Radio Engin., 377-380. Brillouin; Eckert; Fuller; Harvard Univ., Comput. Lab.; Inst. Adv. Study; Irwin; Korn; MacLeish, O'Neal & Tyler; Moore School Electr. Engin.; O'Neal & Tyler; Williams & Kilburn; U. S. Air Force, 431-445. Booth & Britten; Cohen & Keye; Coombs; Hamilton; Hoberg & Ulman; Page; Patterson, Snyder, Tabor & Travis; Pfeiffer; Wilkes; Wilkes & Renwick, 488-490. Anon.; Arenberg; Boothroyd & Cherry; Brainerd & Sharpless; Bronzo & Cohen; Chu; Davis; Goldstine & Neumann; Hartree, Newman, Wilkes, Williams, Wilkinson & Booth; McCool; Sharpless; Wiener, 539-544.

News: Amer. Acad. Arts Sci. 216, Amer. Phys. Soc. 326-327, Amer. Statist. Assoc. 134, Assoc. Computing Machin. 57, 132-134, 216, 380, 445-446, 490, 544-545, Automatic relay computer 216, BAAS 132, Electronic digital computing in England 213-216, Institute Radio Engins. 491-492, Institute Teachers Math. 380, Institution Electr. Engins. 57, IBM 381, IBM Selective Sequence Electronic Calculator 216-217, Intern. Sci. Radio Union 327, Mass. Inst. Techn. 492, Math. Assoc. Amer. 58, Math. Computing France 58, NBSINA 545-547, NBSMDL 327-328, Nat. Electronics Conference 134, Naval Res. Lab. 446, Office Naval Res. 446, Personal 328, Swedish State Board Computing Machinery 492; Symposia on modern Calc. Mach. 381-388.

OTHER AIDS TO COMPUTATION

G. R. Stibitz, A new class of computing aids 217-221.

G. R. Stibitz, Electric root-finder 328-329.

Bibliography: Akushskii; Bartlett; Baudouin; Bergman; Berry & Pemberton; Bruk; Eckert; Fürth & Pringle; Globe-Hilsenrath; Herget; Herrick; Kind-Schaad; King; Renner; Reynolds; Shaffer, Schomaker & Pauling; Tolstov, 58-61. Anon.; Baracket; Benjamin; Black & Olds; Booth; Great Britain, Ministry of Supply; Harbert; Hooks; Johnson; Lafferty; Manley; Meyer zur Capellen; Psychometric Soc. & IBM; Vajda; Waddington; Weissenstein, 134-138. Adcock; Akushskii; Anon.; Gavrilko; Leibin; Packh; Weems, 221-222. Babcock; Goldberg & Brown; Murray; Tiller, 329-330. Camp; Carle; Comrie; Gilbert; Othmer, Josefowitz & Schmutzler; Purdie; Redheffer; Richardson; Tea; Wilkas; Wittke, 388-390. Bothel; Goldberg; Hardy & Dench; Lo-Ho; Nachod; Rubbert; Strohm & DeGroot; Svoboda, 446-448. Hacker; Kiely; Reinhardt; Willers, 492-494. Brown; Carter & Sadler; Knauss; Richards & Sadler; Vand; Wittke, 548-549.

NOTES

80. R.C.A., Certain gear-ratio tables, 61; 81. R.C.A. & M. S. Corrington, *Guide (MTAC no. 7)*, 62; 82. W. F. Willcox, Herman Hollerith, 62-63; 83. H. E. Salzer, Interpolation of functions tabulated at fixed points, 63-64; 84. The National Applied Mathematics Laboratories, 64-65; 85. NAML, 65; 86. Russia and mathematics, 65-66; 87. J. B. Parker & D. H. Sadler, German altitude and azimuth tables," 138-141; 88. R.C.A., Harry Bateman, 141-142; 89. H. S. Uhler, The magnitude of higher terms of the Lucasian sequence, 142-143; 90. *Mathematical Table Makers*, 143-144; 91. R.C.A., Portraits of table makers, 144-145; 92. C. H. Smiley, Portuguese navigation tables, 145; 93. A film of part of Kulik's Magnus Canon for sale, 222; 94. R.C.A., Lambertian or lambda function, 222-225; 95. R.C.A., Rydberg interpolation table, 330; 96. R.C.A., Bartholomäus Pitiscus (1561-1613), 390-397; 97. Fritz Emde, 397-398; 98. R.C.A., Mersenne numbers, 398; 99. R.C.A., Daniel Friedrich

Ernst Meissel, 449-451; **100.** A. Ferrier, A new factorization of $2^n + 1$, 451; **101.** R.C.A., Newman's *Mathematical Tracts*, 451; **102.** Tables of $x \tan x$, 451; **103.** Editors, Arnold Noah Lowan, 494-495; **104.** L. G. Pooler, Roots of certain transcendental equations, 495-496; **105.** A. Ferrier, Note on the factors of $2^n + 1$, 496-497; **106.** Editors, George Neville Watson—table maker, 549-550; **107.** D.H.L., The lemniscate constant, 550-551; **108.** R.C.A., Newman and George Eliot 551-552; **109.** R.C.A., Rheticus, with special reference to his *Opus Palatinum*, 552-561.

PORTRAITS

F. Emde, no. 25; A. N. Lowan, no. 27; D. F. E. Meissel, no. 26; G. N. Watson, no. 28.

QUERIES

24. C. W. Horton, Integral of a Struve function, 66; **25.** R.C.A., Russian Bessel function tables, 66; **26.** R.C.A., Some clothoid or Euler spiral tables, 146; **27.** R.C.A., First table of $\tan^{-1} x$, 226-227; **28.** A. Fletcher, Moseley on definite integrals, 331; **29.** R.C.A., Pitiscus tables, 398; **30.** R.C.A., Girard and Snell tables, 451-452; **31.** R.C.A., Japanese World War II editions of mathematical tables, 498; **32.** French and Russian translations of a Vega-Bremiker table, 561.

QUERIES—REPLIES

There is no no. 36.

33. J. Ginsburg, Editor, Portraits and biographies of British mathematical table makers, 66-67; A. J. Thompson, Henry Briggs, 67; **34.** R.C.A., An Engel table, 146; **35.** J. Todd, Tables of $\tan^{-1} (m/n)$, 227; **37.** N. G. W. H. Beeger, Hendrik Anjema, 331-332; **38.** Log log tables, 398; **39.** R.C.A., Some clothoid or Euler spiral tables, 452; **40.** A. Fletcher, Mrs. G. O. Savage, Editor, Pitiscus tables, 498-499; **41.** J. W. Wrench, Jr., Girard and Snell tables, 561-562; **42.** W. D. Morgan, Editor, Pitiscus tables, 562-563.

SUBJECT INDEX

- | | |
|--|--|
| Accounting 389, 539, 548 | Arc Length 20, 85, 94, 171, 463, 513, 562 |
| Acoustics 37, 134-135, 416, 540 | Astronomy 21, 31-32, 85, 109-116, 189-195,
418-419, 440-441, 513, 526, 531, 556 |
| Actuarial Tables 466 | Astrophysics 526-527 |
| Addition and Subtraction Logs 20, 85, 513 | Automatic Computing Engine (ACE) 214-
215 |
| Aerodynamics <i>see</i> Fluid Mechanics | Automatic Relay Computer (ARC) 216 |
| Air Navigation <i>see</i> Navigation | Automatic Sequence Controlled Calculator
(ASCC) 54-56, 128, 130-131, 149, 210,
213, 314, 377-378, 493, 518 |
| Airy's Integral 337, 339, 418 | Azimuth Computer 58-59 |
| Algebraic Equations 13-16, 453-462, 469,
486-488 | Babbage's "Engines" 53-54, 210, 215, 432,
493 |
| Algebraic Equations, Mechanical Solutions
of 60-61, 81, 137-138, 221, 299, 329-330,
436, 494, 545 | Ballistics 37-40, 127, 197-199, 252-258, 311-
313, 373-377, 437 |
| Aliquot Series 120 | Bell Telephone Relay Computer 1-13, 54,
69-84, 207-208, 210, 375-377, 433 |
| Alpha Functions 112-114 | Bernoulli Functions 368 |
| Altitude-Azimuth 31-36, 59, 110-112, 114-
116, 138-141, 309-311, 530 | Bernoulli Numbers 514 |
| Analogue Machines 56-57, 61, 127, 208-209,
212, 217, 323, 327-329, 382, 441, 491-
494, 501-513, 539-540, 542-544 | Bessel Functions
Asymptotic Expansions 335, 365
Combinations of 305-306, 367, 415, 417
Integrals of 303, 308, 340, 417-418, 550 |
| Anger Functions 103, 365-366 | |
| Annuity 29-30, 408-412, 465-466 | |
| Antenna Theory 303-304, 524 | |
| Antilogarithms 84-85, 463, 465, 514 | |
| Arc Cosine, etc., <i>see</i> Cosine, Inverse, etc. | |

- Logarithms of 62
 Modified 105
 of Complex Argument 25, 333, 335, 352
 of First Kind and Integral Order 41, 65, 88, 102-103, 107, 116-117, 180-181, 183, 185-186, 199, 253, 333, 335, 337, 339, 366-367, 416, 449-450, 474-475, 514, 549
 of Fractional Order 187, 339, 466-467, 484, 514, 550
 of Purely Imaginary Argument 105-107, 365-366, 415, 478, 514, 549
 of Second Kind and Integral Order 107, 187-188, 203, 315, 333, 549
 Spherical 26
 Turning Points of 26
 Zeros of 26, 102, 305-306, 340, 351-352, 366, 496, 514, 549-550
- Bessel Interpolation Coefficients 466
 Beta Function 485
 Binary Computers 48, 128, 287-288, 379, 427-431, 441-443, 488, 491-492, 540
 Binary Quadratic Forms 22-23, 43
 Binomial Coefficients 87, 171, 339, 463, 472, 514
 Binomial Congruences 335
 Binomial Distribution 179
 Biography and Bibliography, Portraits: Airey 143-144, Anding 143, Anjema 331-332, Babbage 143, Barlow 66-67, Bateman 141-142, Bauschinger 143, Becker 143, Bessel 143, Biens de Haan 143, Borda 143-144, Briggs 67, Brown 143, Bürgi 143-144, Burrau 143, Charlier 180, Chebyshev 144, Cohn 143, Comrie 143-144, Cunningham 143-144, Dase 143, Davis 143, Dickson 143, Dodson 67, Dwight 143, Eckert 145, Eliot, George 551-552, Emde 144, oppo. 333, 397-398, Farley 66, Filipowski 66-67, Gauss 85-86, Gifford 296-297, Glaisher (J.) 143, Glaisher (J. W. L.) 143-144, Gray 66-67, Hoëne-Wroński 143, Hollerith 62-63, Hoppe 143, Hutton 143, Jacobi 143, Kepler 143-144, Kraitchik 143, Kruse 144, LaLande 143, Lambert 145, Legendre 143, Lehmer (D. H.) 143-144, Lehmer (D. N.) 143, Lodge 143, Lohse 143, Lommel 143, Lowan 143, oppo. 453, 494-495, Markov 143, Martin 143, Meissel oppo. 399, 449-451, Miller 143, Müller 20, Napier 143, Newman 551-552, Nielsen 143, Ostrogradskii 145, Oughtred 372, Pearson 143, Peirce 143, Peters 143-144, Pitiscus 390-397, 498-499, 562, Rheticus 552-562, Rivard 143, Rydberg 330, Sang 143, Segner 226, Sharp 143, Sheppard 143, Stevin 143-144, Stieltjes 143, Tallqvist 143, Thompson 143, Turner 143, Uhler 143, Viète 143, Watson oppo. 501, 549-550, Wright 223-225, 372. *Also* 50-57, 58-61, 126-132, 134-138, 210-213, 221-222, 250-260 (Elliptic Functions), 323-326, 329-330, 377-380, 388-390, 431-445, 446-448, 488-490, 492-494, 539-544, 548-549
- Bivariate Interpolation 524
 Bivariate Normal Distribution 372-373, 474
 Bond Values 29-30, 408-412, 527-528
- Calculating Machines *see* Computing Machines
 CIT (Cal. Inst. Techn.) Electronic Analogue Computer 501-513
 Chebyshev Polynomials 17, 64, 103, 119-121, 300, 405-407, 471
 Chebyshev Quadrature 97
 Chi Square Distribution 302, 363, 466, 515, 519-520
 Christoffel Numbers 26, 41, 416, 473
 Class Number 22
 Clausen Integral 368
 Clothoid 146, 452
 Coding 48-51, 54-56, 78-79, 320, 444, 488-490, 541-542, 545
 Complex Numbers 493, 516-517
 Computational Methods 131-132, 216, 299, 381-382, 400-407, 434-440, 443, 468-472, 486-488, 493-494, 532-539, 545-547
 Computing Machines 1-13, 44-58, 69-84, 121-138, 149-161, 206-222, 286-295, 299, 317-330, 373-382, 388-390, 426-448, 486-492, 501-513, 539-548
 Cone Function 103, 105
 Conformal Mapping 103, 250, 368, 493, 545-546
 Congruences 96, 177, 357, 486
 Constants 20, 42-43, 94, 254, 302, 369, 463, 466-467, 478, 513-515
 Continued Fractions 96, 519
 Conversion 20, 94, 340, 463, 465-467, 513-515
 Coordinates, Polar 94, 340
 Correlation 60, 371, 389
 Cosecant, Log of 19, 371, 513
 Cosecant, Natural 19, 93-94, 172, 371, 513-515
 Cosecants, Sums of 549-550

- Cosine, Hyperbolic 86-87, 93, 170-171, 205, 336, 463, 465-466, 514
 Cosine, Hyperbolic Inverse 517-518
 Cosine, Inverse 85, 87, 463, 465
 Cosine, Log of 19-20, 85-87, 355-356, 370, 463-467, 513-514
 Cosine, Natural 19-20, 85-87, 93-94, 146, 172, 370, 413, 425-426, 463, 466-467, 485, 513-516
 Cosine Integral 104, 336, 338, 417, 479-482, 514, 526
 Cosine Integral, Iterated 526
 Cotangent, Hyperbolic 88-89, 296
 Cotangent, Inverse 85, 87, 465
 Cotangent, Log of 19-20, 85, 355-356, 371, 463-467, 513
 Cotangent, Natural 19-20, 85, 88-89, 93-94, 172, 296, 371, 463, 466-467, 513
 Crystallography 60, 136, 413, 540
 Cube Root 19, 84-85, 98, 302, 340, 370, 463, 466, 494, 513-514
 Cubes 19, 84-85, 171, 370, 463, 466, 513-514
 Cubes, Endings of 298
 Cubic Equations 171, 388, 467
 Cubic Forms 24
 Cuboids 177
 Cybernetics 543-544
 Cylinder Functions 103-104, 369
 Cylinder Functions, Elliptic 101
 Cylinder Functions, Parabolic 104, 365

 Decimal Equivalents of Fractions 19, 462, 514
 Derivatives, Numerical 414-415
 Desk Computers 136-137, 493-494, 548-549
 Determinants 469
 Difference Engine *see* Babbage's "Engines"
 Difference Equations 471
 Differential Analyzer 54, 56-57, 127, 137, 208-209, 212, 491, 493
 Differential Equations 61, 81, 132-133, 160, 184-185, 206-210, 304-306, 330, 436-437, 470, 494, 501-507, 511, 522, 524-526, 532-540, 548
 Differentiation, Numerical *see* Numerical Differentiation
 Digamma Function 472
 Digital Machines 1-13, 44-58, 69-84, 121-134, 149-161, 206-208, 210-217, 286-295, 317-328, 373-381, 427-446, 488-492, 540-542, 544-548
 Diophantine Equations 95, 177, 333
 Divisors 334, 337, 339
 Dixon Function 229, 249-250
 Doppler Method 373-377
 Duodecimal Tables 23, 357, 388

 Eigenvalues 524-526
 Elasticity 29, 93, 357, 368, 483, 511, 545
 Electrodynamics 369
 Electromagnetism 237-239, 250, 253, 256, 308-309, 483-484
 Electronic Delay Storage Automatic Calculator (EDSAC) 490, 542
 Electronic Discrete Variable Computer (EDVAC) 54, 57, 129-131, 213, 379-380, 382, 427-431, 437, 440-441, 444-445, 489-490, 540-541
 Electronic Numerical Integrator and Computer (ENIAC) 1-4, 7, 53-54, 57, 83-84, 126, 129, 131, 133, 185, 206-208, 210, 212-213, 323-326, 330, 375-377, 433, 437, 440, 446, 493, 518, 540-541
 Elliptic Functions 89-92, 104, 229-281, 334-335, 365, 369, 449, 514, 521, 551
 Elliptic Functions, Cylinder *see* Cylinder Functions, Elliptic
 Elliptic Integrals 27-28, 89, 99, 104, 229, 231-281, 304-307, 369
 Emden Functions 336, 339
 Equation Solvers 61, 137-138, 221, 323, 329-330, 447, 491
 Equations, Algebraic *see* Algebraic Equations
 Equations, Transcendental *see* Transcendental Equations
 Error Function, *see* Probability Integral
 Euler Numbers 467, 514
 Euler Product 340
 Everett Interpolation Coefficients 187, 339, 366, 418-419, 470, 472, 477-478
 Exponential Function 85, 87, 103, 173, 334, 371, 426, 463, 465-466, 485, 514
 Exponential Integral 104, 336, 338, 514, 526
 Exponents 176, 357

 Factor Tables (general) 85, 87, 95, 171-172, 222, 334, 336, 339, 462-463, 466-467, 532
 Factor Tables (special) 21, 23, 95, 118-119, 299, 357, 451, 486, 496, 518-519
 Factorials 85, 205, 340, 355, 357, 466
 Factorials, Logs of 85, 466, 514
 Factorials, Ratios of 26
 Factorials, Reciprocals of 514
 Farey Series 333, 339
 Fermat's Converse 314, 451, 496-497, 518-519
 Fermat's Last Theorem 493
 Fibonacci Sequence 96-97, 119-120, 299
 Figurate Numbers 171
 Fisher's z-Test 519-520, 524
 Fluid Mechanics 36-40, 109, 116, 136, 197-199, 206-207, 209-210, 299, 311-313, 356, 369, 511, 522, 545

- Formulae 94, 251, 369, 466, 474, 513-515, 521-523
 Fourier Coefficients 241, 251, 413, 471
 Fourier Integrals 21, 181-183, 475-476
 Fourier Series 16, 82, 251, 434
 Fourier Transformation 104
 Fourier Transformer 61
 Fresnel Integrals 104, 146, 336, 417, 467, 479
 Functions (special) *see* under Alpha, Anger, Bernoulli, Bessel, Beta, Cone, Cylinder, Digamma, Dixon, Elliptic, Emden, Exponential, Gamma, Hankel, Harmonic, Hermite Probability, Hyperbolic, Hypergeometric, Intensity, Jacobi Zeta, Kelvin, Kummer, Laguerre, Lambda, Legendre, Lommel, Lommel-Weber, Mathieu, Planck's, Polygamma, Psi, Radiation, Ramanujan's, Riemann Zeta, S and T, Scattering, Spherical, Spheroidal Wave, Stokes', Struve, Symmetric, Tetragamma, Theta, Toroidal, Trigamma, Trigonometric, Weber, Wedge, Weierstrass Elliptic, Whittaker, Zeta.
- Galois Fields 97
 Games 389, 490-491
 Gamma Function 98, 103, 307, 317, 336, 338, 369, 466, 472, 478, 514, 521, 549, 551
 Gamma Function, Complex Argument 415-416
 Gamma Function, Incomplete 104, 302
 Gamma Function, Log of 340, 465, 549
 Gaussian Quadrature 97, 470
 Gear Ratios 61, 462
 Geodesic Tables 86-87, 513, 528-529
 Grades 94
 Graeffe Process 487-488, 494
 Graphs 138, 299, 306, 388
 Gravitation 20, 417-418
 Gregory-Newton Interpolation Coefficients 358, 470
 Gudermannian 466, 514
- Hankel Functions 299
 Harmonic Analysis 61
 Harmonic Analyzer 137-138
 Harmonic Functions 61, 182
 Harmonic Series 159-160
 Harmonic Syntheses 413
 Heat Equation 109, 240, 299, 511
 Hermite Polynomials 103, 167-169, 180, 416, 471, 473, 521
 Hermite Probability Function 338
 Hydraulics, Hydrodynamics, *see* Fluid Mechanics
 Hyperbolic Functions 371, 517-518
- Hypergeometric Function 103-104, 248-249, 307, 338, 369, 522
 Hypergeometric Function, Confluent 102, 336, 340, 366, 369, 520, 522-524
- Ideals, Reduced 336, 339
 Indices 372
 Integral Equations 104, 390
 Integrals, Misc. Definite 21, 29, 188, 307-308, 331, 369, 418, 472-474, 479-482, 524, 526-527
 Integrals, Multiple 479, 550
 Integrals, Tables of 87, 188, 251, 466, 482, 514
 Integraph 138, 306, 390
 Integration, Numerical *see* Numerical Integration
 Integration of Differential Equations *see* Differential Equations
 Intensity Function 484
 Interest, Compound 408-412, 465-466, 514, 528
 International Business Machines (IBM) Selective Sequence Electronic Calculator 216-217, 326-328, 330, 367, 381-382, 540
 International Business Machines (IBM) Sequence Relay Calculator 83, 133, 149-161, 207-208, 375-377
 Interpolation 26, 63-64, 82, 85, 205-206, 212, 330, 339, 358, 361-362, 366, 408-412, 414-415, 418-419, 466, 468-472, 481, 494, 515, 519
 Isograph 138, 491
- Jacobi Nome q 229, 234-235, 256
 Jacobi Polynomials 103
 Jacobi Zeta Function 90-91, 241, 244-246, 256-257
 Julian Year 514
- Kelvin Function 340
 Kummer Function 104
- Lagrangean Coefficients 98, 302, 414, 466, 469, 472
 Lagrangean Polynomials 469
 Laguerre Functions 104, 365
 Laguerre Polynomials 103, 532
 Lambda Function, *see* Lambertian
 Lambertian 170, 222-225
 Laplace Coefficients 229, 237, 252, 470
 Laplace Equation 106, 239, 299, 343-346
 Laplace Transforms 104, 178, 183-184, 476, 523
 Lattice Points 22-23
 Least Squares 189-191, 300, 302-303, 470-471, 513

- Legendre Functions 103, 252, 365, 525
 Legendre Polynomials 16-18, 99, 103, 167, 186, 334, 337, 339, 369, 470-472, 484, 514, 521
 Lemniscate Constant 550-551
 Linear Equations 13-16, 60-61, 81, 436, 453-462, 545
 Linear Forms 21-22
 Linkages 222, 447-448
 Logarithmic Integral 104, 308
 Logarithms, Common 19-20, 84-85, 87, 340, 355, 365, 370, 425-426, 463, 465, 467, 513-514
 Logarithms, Natural 85-87, 142-143, 171, 360, 372, 463, 465, 513-514
 Logarithms, Addition and Subtraction *see* Addition and Subtraction Logarithms
 Logs of Primes 463
 Log Log 398, 426, 548
 Lommel Functions 103, 186
 Lommel-Weber Functions 103, 336

 M, the Modulus of Common Logarithms 20, 85, 465
 Magic Squares 531-532
 Magnetism 99, 237-239
 Mark I 58, 69, 79, 83, 432-446, 493, 545
 Mark II 2, 58, 83-84, 210, 433-434, 437-438, 446, 493
 Mark III 446, 492, 499, 540
 Mathieu Functions 103-104, 366
 Matrices 159-166, 399-400, 436-437, 453-456, 469, 473, 544
 Mellin Transform 475-476
 Memory Tube 281-286
 Mersenne Numbers 142, 398
 Meteorology 85, 102
 Monte Carlo Problem 544, 546-547
 Mortality Tables *see* Actuarial Tables
 Motor-boating 508
 Multiplication Tables 299, 355, 465

 Navigation 32-36, 43-44, 58-59, 138-141, 145, 195-197, 221, 309-311, 361-362, 369-371, 419-422, 529-531
 Network Analyzer 222, 417, 539
 Newton Interpolation Coefficients 470, 472
 Nomographs 135-137, 173-175, 390, 447, 514, 529-531, 547
 Normal Distribution 515
 Normal Ordinate 466
 Number Theory 21-24, 95-97, 142-143, 176-177, 298-299, 333-340, 357-358, 451, 468, 486, 496-497, 518-519, 531-532, 550-551

 Numerical Differentiation 466, 468-470, 494
 Numerical Integration 60, 81-82, 97, 107-108, 132, 466, 468-470, 494, 516
 Numerical Integration of Differential Equations *see* Differential Equations
 Numeroscope 432

 Optics 99-101, 412, 482, 524
 Opus Palatinum 554-558
 Orthogonal Polynomials 300, 360, 369, 472

 Partitions 340, 519, 550
 Pearson Integral 335
 Pell Equation 335
 Physical Tables 85, 253-254, 513
 Physics 20, 107-109, 175-176, 237-239, 250, 253, 256, 308-309, 369, 483-484, 522-523, 547
 Pi 18-19, 20, 172
 Pi, Multiples of 85, 463, 513
 Pi, Powers of 42-43, 85
 Planck's Function *see* Radiation Function
 Planimeter 138
 Poisson Distribution 301
 Poisson-Laplace Equation 61
 Polar Coordinates 172-173
 Polygamma Function 334, 336
 Polygons 561
 Polyhedra, Regular 467, 561
 Polynomial Approximations 400-407, 426
 Powers, Fifth, Decomposition into 336, 339
 Powers, Fourth 87, 466, 514
 Powers, Fractional 466, 485
 Powers, Higher than Fourth 85, 167-169, 171, 334, 337, 339, 463, 466, 514
 Powers, Negative 466, 485
 Powers, Sums of 358, 514
 Prime Pairs 532
 Primes, Distribution of 532
 Primes, Lists of 85, 87, 171-172, 357, 467, 532
 Primes, Logs of 463
 Primes, Number of 95
 Primes of Special Forms 119, 357-358
 Probability Integral 87, 98, 178, 180, 301-302, 316-317, 336-337, 339, 359-360, 365, 466, 474, 514
 Probability Integral, Integrals and Derivatives of 336, 338, 521
 Probability Integral, Inverse of 180, 301
 Psi Function, *see* Digamma Function
 Punch Card Machines 2-4, 7, 60, 135, 150-151, 221, 325, 352-355, 376-377, 381, 433
 Punch Card Methods 27-29, 60, 135, 255, 352-355, 456-462
 Punch Card Tables 60

- Quadratic Forms 22-23, 43
 Quadrature *see* Numerical Integration
 Quantum Mechanics 27-29, 188
 Quarter Squares 514
 Quartic Congruences 21, 96, 486
- Radiation 107, 484
 Radiation Function 175-176
 Radioactivity 548
 Railway Transition Curves *see* Clothoid
 Ramanujan's Function $\tau(n)$ 23, 177, 298, 468, 550
 Random Numbers 547
 Raytheon Computer 286-295, 317-323, 327, 540
 Reciprocals 84-85, 87, 94, 169-170, 466, 513
 Reciprocals of Factorials *see* Factorials, Reciprocals of
 Recurring Series 142, 519
 Reeves Electronic Analogue Computer (REAC) 501
 Reeves Instrument Corporation Analogue Computer (REEVAC) 327, 382
 Relay Computers 1-13, 54, 69-84, 127, 149-161, 164-166, 207-208, 216-217, 376-378, 545
 Riemann Zeta Function 21, 366, 475-476
 Root-finder 328-329
 Roots, Higher than the Third 340, 466
 Rounding-off Errors 437, 544
- S and T Functions 20, 85-86, 464-465, 467, 515
 Scattering Function 107, 484
 Secant, Inverse 465
 Secant, Log of 19, 513
 Secant, Natural 19, 93-94, 172, 513, 515, 556-561
 Selectron 378-379, 444, 544
 Series, Double 399-400
 Series, Summation of 87, 170, 466, 475-476, 520
 Sine, Hyperbolic 86-87, 93, 170-171, 205, 336, 463, 465-466, 514
 Sine, Hyperbolic Inverse 517-518
 Sine, Inverse 85, 87, 463, 465
 Sine, Log of 19-20, 85, 87, 355-356, 370, 463-467, 513-514
 Sine, Natural 19-20, 85-87, 93-94, 172, 335, 370, 413, 463-467, 485, 513-516, 556-561
 Sine Integral 104, 334, 336, 338, 417, 479-482, 514, 526
 Sine Integral, Iterated 526
- Slide Rule 19, 58, 134-137, 221, 329, 388-389, 446-447, 493, 548
 Snedecor's Ratio F 363-364, 466
 Spectroscopy 27-29, 255
 Spherical Area and Volume 463
 Spherical Functions 369
 Spherical Harmonics 365
 Spherical Triangles 32, 556
 Spheroidal Wave Functions 99-101, 524-526
 Square Endings 21-22
 Square Root 19, 60, 84-85, 87, 98, 171, 302, 340, 370, 463, 466, 494, 513-514
 Square Root of Sum of Squares 447
 Squares 19-20, 84-85, 87, 171, 370, 412-413, 463, 466, 513-514
 Statistics 98-99, 125-126, 133-134, 179-180, 300-303, 359-364, 372-373, 415, 426, 466, 485, 515, 519-521, 524, 546-547
 Stirling Numbers 463
 Stochastic Methods 546-547
 Stokes' Functions 366-367
 Struve Functions 66, 103, 340, 365-366
 Student's t-Distribution 466, 520, 524
 Sum of Powers of Divisors 23, 177
 Surveying 493
 Symmetric Functions 24, 414
- Tangent, Hyperbolic 86-89, 296, 463, 465-467, 514
 Tangent, Hyperbolic Inverse 517-518
 Tangent, Log of 19-20, 85-87, 355-356, 370, 463-465, 513
 Tangent, Natural 19-20, 85-89, 93-94, 146, 172, 296-298, 370, 463, 466-467, 513-515, 556-561
 Telephony 98-99
 Tetragamma Function 483
 Tetrahedral Numbers 316, 423-424
 Thermodynamics 511
 Theta Functions 89, 104, 229, 235-236, 239-241, 244-245, 257, 334, 369
 Toroidal Functions 103, 250
 Transcendental Equations 173-175, 178, 414, 469, 495-496, 562
 Triangles, Solutions of 556, 561-562
 Trigamma Function 483
 Trigonometric Functions (special) 19-20, 21, 88, 93-94, 296, 356, 451, 467
 Trigonometric Series 368
 Trigonometric Sums 472
- Universal Automatic Computer (UNIVAC) 133, 341-350, 378, 382, 540

- Van der Pol's Equation 108
 Versed Cosine 94
 Versed Sine 20-21, 94
- Waring's Problem 24, 423-424
 Wave Equation 106
 Weber Functions 103, 365-366
 Wedge Functions 105
 Weierstrass Function, Elliptic 104, 229, 247-250, 254
- Weights and Measures 85, 369, 513
 Whirlwind Computer 444-445, 540
 Whittaker Functions 104
- Zeta Function, Jacobi *see* Jacobi Zeta Function
 Zeta Function, Riemann *see* Riemann Zeta Function
 Zonal Harmonics 514, 521

NAME INDEX

There are about 15 names where the determination of appropriate initials was beyond our powers.

- Abel, N. H. 104
 Abraham, M. 481
 Abramowitz, M. 477
 Abû'l Hasan Ali 226
 Adams, E. P. 88, 314, 423, 463
 Adams, O. S. 249-250, 263
 Adcock, W. A. 221
 Adriaen Metius 560
 Ageton, A. A. 36, 114-116, 145
 Ahlfors, L. V. 546
 Aiken, H. H. 1, 2, 4, 54, 58, 102, 130, 161, 164, 185, 188, 210, 311, 327, 367, 377, 382, 439, 446, 491-492, 499, 517, 545
 Airey, J. R. 25, 102, 107, 116-118, 143-144, 199, 233, 239, 250, 261, 268, 314, 335-336, 338
 Airy, G. B. 337, 339
 Aitken, A. C. 300, 399-400, 469
 Akhmatov, V. V. 420
 Akushskii, I. Īa. 60, 221, 299, 314
 Aldis, W. S. 549
 Alexander, S. N. 128, 380, 438, 545
 Alger, P. L. 25
 Al-Khowārizmī 227
 Allan, F. E. 300
 Allen, E. S. 232, 250
 Allen, H. F. 382
 Alphonse X 563
 Alt, F. L. 1, 13, 44, 69, 84, 121, 133, 159, 161, 179, 380, 382, 440, 446
 Ambrosio, A. 382
 Ambrosio, B. F. 382
 Ames Aeronautical Laboratory 199
 Anan'ev, I. V. 93, 116
 Anderson, E. W. 34
 Anderson, R. L. 360
 Anderson, Ruth K. 382
 Anderson, T. W. 547
 Anding, E. 25, 143
- Andoyer, M. H. 43, 94, 237, 250, 296-297 426, 515-516, 558
 Andrews, E. G. 2, 133, 179, 445, 490
 Andrews, E. J. 382
 Anger, C. T. 103, 365-366
 Anjema, H. 172, 331
 Anno, S. 382
 Anthonisz, A. 560
 Aquino, F. R. de 35-36
 Archibald, R. C. 20-21, 25-26, 61-62, 66, 85-87, 89, 92, 94, 102, 105, 117, 142-143, 145-146, 170, 172-173, 180, 186-187, 203, 225, 227, 229-230, 255, 270, 272, 276, 278, 298, 307, 330, 356-358, 366-367, 369, 372, 396, 398, 415-418, 425, 439, 451-452, 463, 467, 475, 482, 493, 495, 498, 514-517, 520-521, 523, 526, 549, 559-561
 Archimedes 560
 Arenberg, D. L. 479, 540
 Arenz, R. F. 382
 Arndt, L. 248, 250
 Arnold, H. A. 481
 Arnold, Phyllis 161
 Arnquist, W. N. 382
 Aroian, L. 373
 Arrow, K. J. 382
 Asplund, S. E. 382
 Atkinson, E. 256
 Avery, H. T. 382
 Ayachit, G. R. 360
 Azeredo Rodrigues, O. A. de 114, 529
- Babbage, Charles 53, 143, 210, 215, 396, 432, 493
 Babbage, R. H. 432
 Babcock, A. B. 329
 Babcock, H. A. 382
 Badellino, M. 25, 415

- Bailin, L. L. 382
Baily, F. 67
Baldwin, L. U. 382
Baldwin, W. W. 382
Ball, W. W. R. 224
BRL (Ballistic Research Laboratories) 375, 377, 380, 407, 436
Balzer, F. 136
Banachiewicz, T. 13, 16
Banos, A., Jr. 382
Baracket, A. J. 135
Barlow, P. 66-67, 84, 230
Barnes, J. L. 183-184, 382, 545
Barnett, J. 452
Bartky, W. 231, 243, 250
Bartlett, N. R. 60
Bartol Res. Foundation 485
Bateman, H. 58, 141, 229, 239, 241
Bateman, Joan M. 141-142
Baudouin, G. 58
Baugh, A. R. 382
Bauschinger, J. 143, 192, 419
Baxter, Elizabeth P. 383
Beall, G. 356
Beckenbach, E. F. 382-383
Becker, G. F. 143, 200, 223, 225, 371
Bednare, F. J. 383
Beeger, N. G. W. H. 176, 332
Beer, M. 66
Begonich, N. 383, 452
Bell, C. 383
Bell, E. T. 141, 518-519
Bell Telephone Labs. 179, 375-377, 382, 433, 440, 482, 491, 539
Bellman, R. 383
Belzer, J. 544
Beman, W. W. 383
Bems, B. M. 383
Benediht, E. T. 383
Benfield, A. E. 540
Benjamin, K. 135
Bennett, A. A. 520
Bennett, R. 161
Bennett, R. R. 512
Bennett, W. R. 303
Benson, A. I. 383
Benton, A. 383
Berger, A. 26, 473
Bergman, S. 60, 546
Bergmann, S. 247, 250
Bergmark, E. R. 383
Bergson, H. L. 543
Berkeley, E. C. 57, 133, 210-211, 445, 490, 544
Bernoulli, D. 487-488
Bernoulli, Jacques 146, 170, 368, 476, 482, 514
Bernoulli, Joh. 171-172, 559
Berry, C. E. 61, 383
Bers, L. 546
Bertrand, J. L. F. 233, 235-236, 242, 250, 261, 267, 275, 278, 314, 423, 449
Berwick, W. E. H. 336
Bessel, F. W. 25-26, 41, 65-66, 88, 102-103, 105-106, 116-117, 143, 180-181, 183, 185, 187, 196, 199, 203, 229, 253, 300, 305, 315, 333, 335-337, 339-340, 351-352, 361, 365-367, 415-417, 422, 449-450, 466, 470, 474-479, 484, 496, 529, 533, 549-550
Beyer, R. T. 493
Bickley, W. G. 25-26, 333, 337, 339-340
Bieber, V. E., Jr. 383
Bielefeldt, J. A. 383
Bierens de Haan, D. 143, 224, 498
Bigelow, J. H. 378, 440
Bilgeri, M. 560
Billings, J. S. 62
Birge, R. T. 300
Bisch, P. E. 383
Bishop, W. W. 397
Björnbo, A. A. 560
Black, B. J. 135
Blackwell, D. H. 383, 547
Blake, F. G., Jr. 304, 481
Blanch, Gertrude 101, 185, 234, 250, 256, 383, 478, 526, 544
Blewett, J. P. 99
Blinn, W. J. 383
Bliss, C. I. 301
Bloch, R. M. 295, 317, 322, 432
Blythe, J. H. 383
Boaga, G. 528
Boas, R. P., Jr. 183
Bôcher, M. 105, 107
Bode, H. W. 179
Bode, J. E. 137
Bodewig, E. 488
Bodwell, C. A. 383
Boehr, J. W. 383
Boelter, L. M. K. 381, 383
Bohlin, K. 233, 235, 242, 250, 272, 307
Bohnenblust, H. F. 546
Boll, M. 93, 223, 225, 232, 234, 239, 242, 250, 296, 466, 485, 518, 531
Bollay, E. 383
Bollay, W. 383
Bolles, E. E. 383
Bolton, W. W. 383
Boltzmann, L. 350

- Bond, H. 224
 Bonneau, J. 87
 Bonness, J. J. 383
 Booth, A. D. 136, 214, 216, 488, 542
 Booth, J. 92
 Boothroyd, A. R. 540
 Borda, J. C. 143-144
 Borden, J. R. 383
 Bordonni, P. G. 366
 Borgnis, F. 106-107
 Born, M. 242, 250
 Bortkiewicz, L. 180
 Bose, P. K. 415
 Bose, R. C. 415
 Bosmans, H. 559
 Bosshardt, R. 172
 Bothel, J. R. 446
 Bourquard, F. 37, 40, 147
 Boussinesq, J. 135
 Bouton, C. L. 389
 Bouwkamp, C. J. 99, 101, 303-304, 481, 524-526, 531
 Bowditch, N. 44, 115, 420
 Bower, B. B. 383
 Bower, E. C. 383, 419, 425-426
 Bowman, F. 41, 267
 Boyd, Bettie 179
 Boyden, R. E. 383
 Bradburn, J. R. 383
 Brady, F. H. 383
 Brainerd, J. G. 184, 540
 Bramble, C. C. 382-383, 446
 Branchflower, D. R. 383
 Brancker, T. 172
 Brandenburg, H. 40, 43, 88, 136
 Brandstatter, J. J. 383
 Brasey, E. 25
 Braudon, C. 383
 Brauer, E. 365-366
 Brauer, P. 365-366
 Braun, E. L. 383
 Braun, J. H. 383
 Braunmühl, A. 226, 397, 560, 562
 Bremiker, C. 136, 467, 561
 Bridger, M. 340
 Briggs, H. 67, 136, 515-516, 531, 562
 Brillouin, L. 212, 431, 435
 BAASMTTC 25, 90, 92, 107, 117, 180, 187-188, 199, 245, 250, 253, 257, 315, 333-334, 338, 396, 415, 424, 450; *see also* RSMTC, 478, 483
 Britten, K. H. V. 216, 488
 Brittle, G. N. 383
 Broadbent, T. A. A. 550
 Brocot, A. 462
 Brode, W. R. 381, 383
 Bromberg, R. 383
 Bronwin, B. 97
 Bronzo, J. A. 540
 Bross, I. J. 383
 Brouwer, D. 237, 251
 Brown, B. H. 120
 Brown, Bernice 383
 Brown, E. W. 143, 237, 251, 259, 361
 Brown, F. W. 383
 Brown, G. W. 329, 383, 547
 Brown, J. C. 224
 Brown, R. 543
 Brown, R. R. 383
 Brown, R. T. 548
 Brown & Sharpe 61
 Bruhns, C. C. or K. C. 88, 560
 Bruk, I. S. 61
 Bruno, F. Faà di 24
 Bruns, H. 248-249
 Bryan, F. E. 383
 Buchanan, J. M. 383
 Buchholly, W. 383
 Buckingham, E. 413, 423
 Buckley, H. 390
 Büchner, J. P. 171
 Buell, E. L. 383
 Bürgi, J. 136, 143-144
 Bullard, E. C. 417
 Buniakowsky, V. J. 249
 Burckhardt, J. C. 334, 331
 Burdwood, J. 32
 Bureau of Census 350
 Burgess, G. K. 176
 Burington, R. S. 232, 251
 Burks, A. W. 50, 56, 128-129, 131, 211, 227, 323-324, 443
 Burrau, C. 143
 Burton, Patricia 383
 Busemann, A. 37, 40
 Bush, V. 54, 56, 127
 Bussard, R. W. 383
 Butter, F. A., Jr. 383
 Butterworth, S. 239, 251
 Byerly, W. E. 16, 242, 246, 251, 258
 Caesar, Julius 514
 Cahen, E. 95, 476
 Cahn, A. 383, 544
 Cajori, F. 224, 391, 397
 Caldirola, P. 84
 Caldwell, S. H. 61, 136, 438-439, 492, 544
 California, Univ. of, Statistical Lab. 372-373
 Callandreaux, O. 249, 251

- Callet, F. 88, 413, 425-426
 Cambi, E. 42, 180-181, 186, 199, 231, 234, 251, 304-305, 367
 Cameron, R. H. 383
 Camp, K. 388
 Campbell, D. F. 242, 251
 Campbell, G. A. 181-182
 Campbell, R. V. D. 57, 133-134, 295, 317, 322, 382-383, 433, 446, 481, 490
 Cannon, E. W. 44, 64, 121, 134, 206, 317, 373, 383, 426, 486, 488, 491, 532, 544
 Cantor, M. 397, 560
 Caples, D. B. 383
 Cardwell, W. T., Jr. 383
 Carini, W. P. 383
 Carle, N. A. 388
 Carslaw, H. S. 178
 Carter, A. E. 548
 Cashen, R. O. *see* Tysser, Mrs. R. St. H.
 Caspar, M. 560
 Cassen, B. 383
 Cassini, J. 563
 Cassity, C. R. 383
 Catalan, E. C. 238
 Catlett, W. J. 36
 Cauchy, A. 476
 Cayley, A. 223, 225, 334-335, 338
 Cazzola, E. 84-85, 116
 Cecconi, A. 233, 240, 251
 Cesareo, O. 127
 Cesàro, E. 146
 Chamaleix, M. L. 309-310
 Chambers, W. & R. 40, 86, 205, 314, 464
 Chandler, G. H. 223, 225
 Chandler, W. W. 323
 Chaplygin, S. A. 522
 Chapman, J. 552
 Chappell, E. 426
 Charlier, C. V. L. 180, 471, 521
 Charney, J. G. 102
 Chaundy, T. W. 335
 Chebyshev, P. L. 17, 64, 97-98, 103, 116, 119-120, 144, 300, 405-407, 471
 Chernac, L. 331
 Cherry, E. C. 540
 Cherry, L. H. 383
 Cheydleur, B. F. 544
 Chiappinelli, B. A. 383
 Christmann, J. 557-558
 Christoff, C. A. 383
 Christoffel, E. B. 26, 41, 103, 416, 473
 Chu, C. 442, 540
 Chu, L. J. 101, 526
 Church, R. 447
 Churchill, R. V. 183
 Clark, D., Jr. 258, 383
 Clark, K. 328
 Clarke, Martha 178
 Clausen, T. 368
 Clauser, F. H. 383
 Cleaver, F. 337
 Clerke, A. M. 67
 Clifford, W. K. 478
 Clippinger, R. F. 133, 207, 446, 544
 Coarza, J., Jr. 383
 Cochran, W. G. 135, 361, 363
 Cohen, A. A. 488
 Cohen, H. 498
 Cohen, H. G. 540
 Cohen, L. 232-233, 238-239, 251, 258-259
 Cohn, B. 143
 Coleman, B. L. 227
 Collar, A. R. 166
 Collatz, L. 496, 562
 Collie, C. H. 415
 Columbia Univ. Press 26
 Comfort, E. G. H. 201, 371, 425, 485
 Comrie, L. J. 41, 53, 57, 86, 88, 117-118, 143-144, 204-205, 211, 223, 225, 230, 264-265, 267, 276, 314, 336-339, 361, 389, 424, 452, 464-465, 514
 Concordia, C. 380, 383
 Condon, E. U. 64, 212, 389, 491
 Conforto, F. 244, 251, 260
 Conn, J. F. C. 121, 407
 Coombs, A. W. M. 323
 Coombs, J. M. 134, 489
 Cooper, E. P. 546
 Cooper, R. I. B. 417
 Copernicus, N. 394, 553-554, 557, 560
 Copsey, E. H. 399-400, 473
 Coriolis, G. G. 33, 35
 Cornu, A. M. 146, 479
 Corrington, M. S. 42, 62, 308, 315
 Cossar, J. 183
 Cotes, R. 470
 Couffignal, P. L. 58, 212, 378, 439
 Coulbert, C. D. 383
 Coulomb, C. A. de 512
 Courant, R. 400, 436, 545
 Cox, W. E. 383
 Cracknell, A. G. 87
 Craig, B. M. 383
 Crawford, *see also* Lindsay, J. L.
 Crawford, P., Jr. 133, 381, 383
 Creak, T. G. 357, 531
 Crelle, A. L. 41, 136, 449
 Cremona, L. 467, 561
 Cresson, E. 63
 Criner, H. E. 512

- Cross, M. C. 30
 Cross, P. C. 27-29
 Crout, P. D. 302, 469
 Cugle, C. H. 32
 Cummings, C. I. 383
 Cunningham, A. J. C. 96, 143-144, 333, 335-339, 357, 486, 531
 Curry, H. B. 61, 212
 Curtis, H. L. 238, 251, 259
 Curtiss, J. H. 57, 64, 132, 134, 380-381, 383, 443, 545-546
 Curtze, M. 560
 Cusa, Nicholas, *see* Nicholas de Cusa.
 Cutler, Leola 383
- Dahlgren, E. W. 83-84, 382, 433
 Dale, J. B. 223, 225, 232, 242, 251, 262, 314, 514, 531
 Dancoff, S. M. 383
 Danielson, W. D. C. 450-451
 Danjon, A. 514
 Dantzig, G. B. 133, 382-383
 Dantzig, T. 383
 Dapron, F. E. 383
 Darmstadt Techn. Hochschule 137
 Darwin, C. 214
 Dase, Z. 143, 334
 Daus, P. H. 383
 Davidson, Nancy L. 383
 Davis, C. F. 384
 Davis, H. M. 540
 Davis, H. T. 143, 181, 300, 303, 358, 415, 423-424, 450, 463, 473, 483
 Davis, P. L. H. 32, 147
 Davison, *see* Devison
 Davy, H. 66
 Day, L. E. 384
 Debye, P. 365
 Dederick, L. S. 437
 Degen, C. F. 335
 DeGroot, A. 447
 Delambre, J. B. J. 394, 396, 556-557, 559
 Delmonte, J. 384
 DeMarcus, W. 547
 DeMorgan, A. 67, 84, 224, 308, 314, 394-396, 531, 549, 556-557, 559-561
 Dench, E. C. 447
 Dennis, P. A. 384
 DePrima, C. R. 384
 Derr, W. A. 389
 Descartes, R. 174, 340
 Deschodt, J. 474
 Dethlefsen, D. G. 384
 Dettwiler, H. 136
 Deverall, L. I. 384
- Devison, B. B. 241, 251
 Dewey, C. B. 384
 Dibble, E. S. 384
 Dickson, L. E. 24, 120, 143, 336, 339
 Dienesch, J. 398
 Dietzold, R. L. 138
 Dijksterhuis, E. J. 224
 Dill, D. G. 384
 Dillon, J. C. 384
 Dimsdale, B. 488, 544
 Dinnik, A. N. 25, 365-366, 478
 Diophantos, 95, 177, 333
 Dirichlet, P. G. L. 60, 221
 Dirkes, R. F. 438
 Ditkin, V. A. 299, 314
 Dixon, A. C. 229, 249-250
 Dixon, W. J. 316
 Djure, S. 323
 Dodson, J. 67, 563
 Doetsch, G. 183
 Donahue, J. 384
 Donnay, J. D. H. 413
 Doob, J. L. 547
 Doodson, A. T. 335-336
 Doolittle, E. 249
 Doppler, J. C. 133, 373-374, 446
 Dorodnitsyn, A. A. 108
 Dorsey, N. E. 238, 251, 258
 Dougall, J. 107
 Douglass, P. W. 384
 Drayton, M. 552
 Dreisonstok, J. Y. 420
 Dresher, M. 384
 Driggers, Mary 384
 Dronrijp, Magdalena C. 331
 Drucker, D. C. 483
 Duarte, F. J. 95
 DuBois-Reymond, P. 550
 Duncan, D. B. 13, 16
 Duncan, W. J. 166
 Dunford, J. M. 384
 Dunsmore, C. L. 384
 Durfee, B. M. 149
 Durfee, W. P. 532
 Dwight, H. B. 25, 143, 201, 223, 232, 234, 251, 262, 305-306, 314, 423, 482
 Dwyer, P. S. 13, 16, 135
 Dyer, H. S. 135
 Dykstra, C. 381
- Eastman, G. 441
 Eaton, B. G. 384
 Eberlein, W. F. 101
 Ebsen, J. 31-32
 Echdahl, D. E. 384

- Echols, R. L. 547
 Eckardt, J. H. 451
 Eckert, J. P., Jr. 129-131, 443-444, 491, 540
 Eckert, W. J. 60, 135, 145, 161, 206, 217, 327, 355, 432
 Eckert-Mauchly Computer Corp. 327-328, 350, 378, 380, 491
 Eddington, A. 336
 Eddy, R. P. 496
 Edlefsen, N. E. 382, 384
 Edmonds, C. K. 397
 Edmundson, H. P. 384
 Eisenhart, C. 64
 Ekelof, S. 328
 Elbourn, R. D. 326
 Elconin, V. 384
 Elderton, E. M. 180
 Eliot, George (*pseud.*) *see* Evans, Mary A.
 Ellis, A. T. 384
 Ellis, M. 295, 317, 322
 Ellis, W. 296
 Emde, F. 25, 41, 62, 88-89, 106-107, 144, 176, 231-232, 234-236, 238-242, 244, 247, 249, 252-255, 263, 267-270, 275, 296, 305, 307, 314-315, *oppo.* 333, 364-365, 371, 397-398, 416-417, 423, 450, 452, 479, 482, 517
 Emden, R. 336, 339
 Emmons, H. W. 36, 40, 198, 437
 Emslie, A. G. 540
 Encke, J. F. 419, 470
 Engel, E. 146
 Enger, M. L. 384
 Englund, C. R. 451
 Epstein, A. L. 201
 Erdélyi, A. 57-58, 141, 183
 Ericsson, L. M. 323
 Ericsson, S. 492
 Erlang, A. K. 98-99
 Euclid 66, 357, 528
 Euler, L. 95, 146, 184, 189, 255, 340, 358, 452, 467-468, 475, 479-480, 482, 495, 514, 526, 531, 551
 Evans, Mary A. (G. Eliot) 551-552
 Everett, J. D. 187, 339, 366, 418-419, 470, 472, 477-478
 Everett, R. R. 384
 Fabry, C. 176
 Fadle, J. 414
 Fairbanks, A. F. 384
 Fairthorne, R. A. 136, 400
 Fano, U. 547
 Farey, J. 333, 339
 Farley, R. 66
 Faucher, C. 425
 Fauquembergue, E. 496
 Fawks, G. R., Jr. 384
 Feferman, S. 384
 Feldheim, E. 167
 Felkel, A. 171, 222
 Feller, W. 98-99, 179, 301-302, 317, 358-360, 474, 520, 524, 531, 547
 Fender, F. G. 384
 Fenn, G. S. 384
 Ferber, B. 384
 Ferguson, D. F. 18-19, 334, 340
 Fermat, P. 314, 451, 493, 496, 518
 Ferrari, C. 356
 Ferrari, K. G. 192-195, 199
 Ferrier, A. 95, 451, 497
 Feshbach, H. 107
 Fibonacci (Leonardo of Pisa) 96, 119, 299
 Filipowski, Z. H. or H. E. 66-67
 Filon, L. N. G. 335, 338
 Financial Publ. Co. 30, 527
 Fincke, T. 397
 Findley, W. G. 135
 Finney, D. J. 359-360, 364
 Fischer, W. L. F. 467, 561
 Fisher, R. A. 300, 333, 336-337, 359-360, 362-363, 371, 426, 515
 Fix, Evelyn 373
 Flanagan, J. C. 135
 Fletcher, A. 29, 31, 61, 92, 108, 119, 188, 203, 223, 229-230, 232-233, 237, 240, 252, 276-277, 305-307, 314, 331, 365, 371, 449-451, 477, 495, 498, 521, 531, 551
 FMR 31, 61, 108, 119, 203, 223, 240, 276-277, 314, 371, 495, 531, 551
 Flood, M. M. 88, 384
 Follin, J. W., Jr. 384
 Fontoura da Costa, A. 114-116, 145
 Forbes, S. H. 485
 Forrester, J. W. 382, 384, 435
 Forsdyke, A. G. 239, 252, 256
 Forster, H. K. 384
 Forsyth, A. R. 335, 338, 539
 Forsythe, G. E. 384, 547
 Forsythe, W. E. 176
 Forti, A. 201, 223, 225
 Foster, R. M. 181
 Fouquet, W. 239, 252
 Fourier, J. B. J. 16, 21, 61, 82, 104, 136, 181-182, 241, 247, 251, 400, 413, 434, 471, 475, 544
 Fout, A. A. 384
 Fowle, F. E. 176, 232-233, 238, 252-253

- Fox, E. N. 246, 252
 Fox, L. 132, 462
 France, Inst. Géogr. Nat. 355, 371
 France, Service Géogr. de l'Armée 355
 France, Service Technique Aéronautique
 309-310, 314, 371
 Frankel, S. P. 384
 Franks, J. R. 384
 Fraser, C. H. 384
 Frazer, H. 399-400, 473
 Frazer, R. A. 166
 Frazier, T. V. 384
 Frederic, O. C. E. 384
 Frederick II 397
 Frederick IV 390-391, 394, 554-557
 Freeman, J. G. 29, 243, 252
 Frehafer, Mabel K. 176
 Fresnel, A. J. 104, 146, 336, 417, 467, 479,
 550
 Freund, J. 384
 Frick, R. H. 384
 Fricke, R. 232, 235, 242, 252
 Fridén, C. 375
 Friedman, B. 382, 384
 Frisby, E. R. 384
 Frobenius, G. 533
 Fröberg, C. E. 492
 Frost, A. E. 438
 Fruitman, F. 384
 Fry, B. L. 384
 Fry, T. C. 99, 138, 306, 521
 Frye, W. E. 384
 Fuchs, H. O. 384
 Fürth, R. 61
 Fuess, Barbara F. 384
 Fuller, H. W. 432, 438

 Gabba, L. 20, 40
 Gabler, R. T. 384
 Gadd, J. O., Jr. 481
 Galton, F. 337
 Galvan, Marjorie 384
 Gamble, Miss N. 418, 423
 Garabedian, P. R. 546
 Gardiner, W. 88
 Gardner, M. F. 183-184
 Garfinkel, B. 377
 Garreau, G. A. 340
 Garrick, I. E. 522, 545
 Gass, 396
 Gauss, A. F. G. T. 86
 Gauss, C. F. 63, 86, 97, 104, 161, 193, 201,
 221, 233, 245, 247, 252, 254, 262, 314,
 350, 416, 419, 470-473, 493, 515, 528,
 531, 551
 Gauss, F. G. 85-86, 136
 Gavrilko, G. I. 222
 Gegenbauer, L. 103
 Gellibrand, H. 515-516
 George Eliot (*pseud*), see Evans, Mary A.
 George of Trebizond 562
 Gerlough, D. L. 384
 Germany, Deutsche Seewarte 31, 109, 116,
 138-139
 Germany, Reichsluftfahrtministerium 32
 Germond, H. H. 384
 Gernerth, A. 395
 Ghizzetti, A. 415
 Gibbs, J. W. 434, 543
 Gibson, S. O. 384
 Gifford, Emma 296-298, 314, 337, 339
 Gilbert, P. 146
 Gilbert, R. E. 389
 Gilmore, F. R. 384
 Ginsburg, J. 66
 Girard, A. 451, 561-562
 Girshick, M. A. 384, 547
 Glaisher, J. 143, 172, 334, 338
 Glaisher, J. W. L. 89-90, 92, 108, 120-121,
 143-144, 167, 170, 172, 201, 226, 234-
 236, 241, 244-247, 252, 257, 262-263,
 314, 334-339, 358, 372, 396, 424, 463,
 531, 557, 559
 Glazenap, S. P. 62, 232, 235, 242, 252, 268,
 272, 307, 423
 Globe, S. 58-59
 Gloden, A. 21, 87, 96, 118-120, 298, 357, 486
 Gobbin, H. H. 85, 136
 Godfrey, G. H. 482
 Gold, E. 108
 Goldberg, E. A. 329, 447
 Goldman, S. 416, 423
 Goldschmidt, G. H. 412
 Goldstein, L. 302
 Goldstein, S. 106-107
 Goldstine, Adele K. 323
 Goldstine, H. H. 50, 54, 56, 128, 131, 166,
 216, 323-324, 382, 384, 462, 541
 Goodpasture, J. J. 384
 Goodwin, E. T. 333-334, 337, 340, 483
 Goodwin, G. 67
 Gorman, J. R. 384
 Gortzel, G. H. 547
 Gosset, W. S. (*Student*) 363
 Gossot, H. C. F. F. 247, 252-253, 263, 314
 Gourier, G. 473
 Gourrich, G. E. 384, 488
 Gradshteyn, I. S. 299
 Graeffe, C. H. 487-488, 494
 Graham, R. B. 384

- Graindorge, J. 253, 259
Gram, J. P. 358, 471, 521
Grandi, L. L. 384
Grassman, H. G. 449
Gravelaar, N. L. W. A. 391, 396
Gray, A. 117, 232, 238, 253, 423, 499-450
Gray, G. J. 67
Gray, H. J. 184
Gray, Marion C. 306, 482
Gray, P. 66-67
Gray, T. 252-253
Great Britain, Admiralty Computing Service 57, 103, 241, 253, 367
Great Britain, Ministry of Supply 136
Great Britain, Nautical Almanac Office 34, 94, 110, 204, 310
Great Britain, Post Office Engin. Dept. 323
Green, J. 384
Green, J. W. 546
Green, L. 178
Greenberg, Celia E. 384
Greenberg, H. 384
Greenfield, M. A. 384
Greenhill, A. G. 89-91, 223, 225, 233, 242, 244-247, 249, 252-253, 263, 268, 314, 335
Greenwood, J. A. 36, 180, 426
Greenwood, R. E. 384, 416
Gregory, J. 224, 331, 358, 470
Griess, J. 253
Griest, R. H. 384
Griffin, Amy E. 384
Griffin, F. L. 242, 253
Griffith, F. M. 384
Griggs, D. T. 384
Grobecker, A. J. 384
Gröbner, W. 482
Gronau, J. F. W. 222
Grosch, H. R. J. 135
Gross, G. L. 474
Gross, O. A. 384
Grover, F. W. 232-235, 238-239, 253, 259, 521
Grunert, J. A. 449
Grynaeus, S. 562
Gudermann, C. 40-41, 201, 223, 225, 244
Günther, S. 560
Guldhammer, H. A. 369, 371
Gumbel, E. J. 426
Gunning, W. F. 384
Gunter, E. 136
Gupta, H. 22-23, 298, 334, 340
Gutshall, W. D. 384
Gwyther, C. E. 334, 337, 339-340, 450
Gyldén, H. 237, 253
Habenstreit, W. B. 384
Hacker, S. G. 492
Haddock, A. G. 247
Hadlock, C. K. 384
Haefele, F. 560
Haeff, A. V. 286, 317, 379
Hage, J. 29, 40
Hagner, F. H. 59
Hahn, W. C. 136
Haight, G. S. 552
Hainer, R. M. 27-29
Hak, J. 238-239, 253
Hales, J. V. 384
Hall, J. R. 384
Hall, W. 223, 225
Hallén, E. 303, 481-482, 526, 531
Halley, E. 224-225, 553, 563
Hamann, C. 136-137
Hamburger, G. E. 413
Hameister, E. 184
Hamilton, A. 489
Hammad, A. 108
Hammer, H. C. 308, 314
Hammer, P. 547
Hanafi, A. R. 24, 40, 414, 423
Hancock, H. 232, 242, 253, 263, 314
Handson, R. 392-393, 397, 499
Hankel, H. 104, 299
Hansen, P. A. 418
Harbert, E. 86, 136
Harder, E. L. 512
Hardgrave, E. J., Jr. 384
Hardy, A. C. 447
Hardy, G. H. 314, 399-400
Hare, G. 384
Harley, R. 335, 338
Harr, J. A. 186, 188, 367, 475
Harris, T. E. 384, 547
Harrison, C. W., Jr. 481-482
Harrison, F. 423, 485
Harrison, J. O., Jr. 407, 426, 437
Hart, H. C. 138
Hart, W. L. 412
Hartig, H. E. 174-175
Hartley, H. O. 337
Hartree, D. R. 56-57, 64, 127, 131, 208, 325, 381-382, 384, 516, 521, 542
Harvard Univ., Computation Lab. 41, 55-56, 69, 79, 83, 102, 117, 130, 161, 166, 181, 185, 311, 314, 367, 381, 416, 432-433, 436, 438-439, 446, 450, 474, 479, 499, 517, 540, 545
Harwood, R. H. 384
Haseltine, W. R. 384
Hasted, J. B. 415

- Hastings, R. E. 384
 Haues, R. M. 385
 Hausman, Lillian F. 160-161
 Hay, H. G. 418, 423
 Hayashi, K. 25, 40, 42-43, 102, 181, 186,
 223, 225, 230, 232-233, 235-236, 242,
 253, 263-265, 276, 278-279, 296, 314,
 367, 475, 518
 Hayden, C. 221
 Hayford, J. F. 529
 Hazen, J. W. 385
 Heaviside, O. 182
 Hedeman, W. R., Jr. 390
 Hegbar, H. R. 385
 Heimlich, I. R. 385
 Heins, A. E. 476
 Helmer, O. 385
 Helmholtz, H. 481, 545
 Henderson, J. 88, 333, 336-337, 339, 394, 467
 Henrion, D. 394
 Herbig, Delia M. 385
 Herget, P. 60, 418-419, 423
 Herman, H. L. 385
 Hermite, C. 26, 103, 167, 180, 234, 253, 338,
 365, 416, 471, 473
 Herold, K. 255
 Herrick, Marjorie 161
 Herrick, S. 59, 385
 Herrmann, 515-516
 Herwald, S. W. 512
 Hestenes, M. R. 385
 Hetzer, E. M. R. 192, 195
 Heuman, C. 27-29, 233-234, 239, 243, 254,
 266, 270-272, 307, 314
 Heun, K. 132, 437, 443
 Hickerson, T. F. 115, 452
 Hicks, B. L. 133, 208
 Hicks, W. M. 335
 Higgins, A. L. 146
 Higgins, T. J. 382, 385
 Hilbert, D. 104, 399-400, 473
 Hildebrandt, T. W. 440
 Hill, B. I. 385
 Hill, G. W. 240-241, 249, 254, 305
 Hill, M. J. M. 335, 338
 Hillam, K. L. 385
 Hillman, A. P. 352, 414
 Hilsenrath, J. 58-59
 Himes, H. W. 385
 Himes, P. J. 385
 Hindenburg, K. F. 171
 Hinkley, E. 172
 Hipler, F. 559
 Hipplesley, R. L. 88-91, 232, 234, 236, 245-
 246, 253-254, 263, 266, 314, 336
 Hirayama, A. 532
 Hirsch, C. J. 491
 Hirsch, M. 482
 Hoagland, A. S. 385
 Hoberg, G. G. 489
 Hobson, E. W. 16, 223, 225, 335
 Hochwald, W. 385
 Hodgman, C. D. 232-233, 254
 Hoehne, G. G. 34, 529
 Hoëne-Wroński, J. M. 143, 539
 Hoffleit, Dorrit 133, 377, 446
 Hoffman, W. C. 385
 Hofreiter, N. 482
 Hohenemser, K. 396
 Holberton, J. V. 133, 208
 Hollerith, Franciska B. 62
 Hollerith, G. 62
 Hollerith, H. 54, 62-63, 135, 215, 399
 Holliday, F. 463, 551
 Holtappel, H. W. 485
 Holzer, R. E. 385
 Hook, J. F. 385
 Hooks, I. J. 135
 Hopkins, R. 385
 Hoppe, E. R. E. 143
 Hopper, Grace M. 210, 377
 Horblit, H. D. 392, 397, 499
 Horenstein, W. 234, 254, 256, 522
 Horgen, Ruth B. 385
 Horner, W. G. 486
 Horowitz, J. 385
 Horton, C. W. 66
 Horton, R. E. 385
 Hossner, A. 255
 Hoüel, J. 88, 91-92, 223, 225, 233-236, 241-
 242, 244, 254
 Householder, A. S. 385, 544, 547
 Houseman, E. E. 360
 Howland, R. C. J. 472
 Hoyt, F. C. 547
 Huckel, Vera 522, 531
 Hülse, J. A. 467
 Hütte, 232, 242, 254
 Huey, R. B. 297-298
 Humbert, P. 183
 Hunrath, K. 560
 Hunt, F. J. 528
 Huntington, A. 385
 Huntington, E. V. 223
 Huntington, H. B. 540
 Hurd, C. C. 385
 Hurty, W. C. 385
 Huskey, H. D. 64, 215, 326, 328, 382, 385,
 462, 516, 544-545
 Huskey, Mrs. H. D. 385

- Hutchcraft, H. W. 385
 Hutchings, C. H. 33-34, 36
 Hutchinson, C. A. 385
 Hutner, R. A. 101, 526
 Hutton, C. 143, 224, 559, 562
 Huygens, C. 144, 562

 Ibn al-Zarqāla 563
 Idelson, N. 233, 254
 Ince, E. L. 336, 339, 531, 539
 Inman, J. 201, 223
 Innes, R. T. A. 235, 237, 249, 254, 258, 266-267, 275, 314
 Inst. Adv. Study, Princeton 440
 International Business Machines Corp. (IBM) 2, 27, 54, 60, 63, 105, 133, 135, 145, 149-150, 155, 157, 185, 206-208, 215-217, 325-328, 330, 352-353, 367, 375-377, 381-382, 426, 432-433, 491, 493, 521, 540, 544
 Irwin, J. B. 114, 189-191, 385, 440
 Irwin, J. O. 333, 336-337, 339
 Isaacs, R. 385
 Isherwood, J. G. 550
 Italy, Consiglio Nazionale d. Ricerche 356
 Italy, Istituto Geografico Militare 528
 Italy, Istituto Idrogr. d. r. Marina 419, 513

 Jackman, Marian C. 301
 Jackson, J. B. 132
 Jackson, W. A. 499
 Jacobi, C. G. J. 89-91, 103-104, 143, 229, 234-236, 241, 243-244, 246-247, 254, 256-257, 350, 449, 482
 Jacobs, C. N. 385
 Jacobs, E. H. 385
 Jacobsthal, E. 372
 Jacq, M. J. 309
 Jäderin, E. 300
 Jaeger, J. C. 178, 417
 Jäger, P. 171
 Jahnke, P. R. E. 25, 41, 62, 144, 176, 231-232, 234-236, 238-240, 242, 244, 247, 249, 252-254, 263, 267, 275, 296, 305, 314-315, 364, 371, 397, 416-417, 423, 450, 452, 479, 482, 517
 James, H. M. 188, 447
 Janssen, E. 385
 Japan, Hydrogr. Dept. (Office) 110, 195-196, 311, 361
 Jeffrey, G. A. 136
 Jeffreys, H. 107, 337, 519
 Jelínek, L. 233, 255
 Joachim, G. *see* Rheticus
 Jørgensen, N. R. 62, 180, 521

 Joffe, S. A. 20, 93, 178, 299, 369, 564
 Johnsen, Madeline 373
 Johnson, D. C. 30
 Johnson, E. F. 385
 Johnson, L. 134
 Johnson, P. A. 385
 Johnson, W. W. 298
 Johnston, H. L. 544
 Johnston, S. 340, 521
 Joncourt, É. de 171
 Jones, C. W. 121, 333, 337, 340, 407
 Jones, H. S. 95
 Jones, Rebecca 161
 Jordan, C. 300, 463, 468
 Jordan, W. 136, 298, 356
 Josefowitz, S. 389
 Joubert, J. 25, 238, 255-256
 Juley, J. 127

 Kac, M. 547
 Kacmarz, S. 407
 Kästner, A. G. 396, 559
 Kahn, H. 385, 547
 Kaiser, H. R. 385
 Kalähne, A. 305
 Kalin, T. 545
 Kallmann, Hildegard K. 385
 Kamke, E. 137
 Kao, S.-K. 385
 Kaplan, C. 522
 Kaplan, E. L. 231-233, 242, 255, 264-265, 268, 270-272, 306-307, 314
 Kapteyn, J. C. 103
 Kariäkin, N. I. 357, 371
 Karlin, S. 385
 Kármán, T. 259
 Karpelesz, K. 67
 Kaster, H. 59
 Katz, A. 299, 314, 519
 Kay, A. F. 385
 Keller, G. 161
 Kelley, T. L. 98, 301, 423, 485
 Kelvin, W. T., *Lord* 25, 334, 338, 340
 Kemmer, P. H. 385
 Kendall, J. T. 144
 Kennedy, E. C. 385
 Kennedy, G. 335
 Kennelly, A. E. 174-175, 225, 516
 Kenney, J. F. 13, 16
 Kepler, J. 143-144, 252, 553, 560
 Kerawala, S. M. 24, 40, 300, 414, 423
 Kerridge, S. 365-366
 Kessman, M. 385
 Ketchum, P. W. 60, 221
 Keye, W. R. 488

- Khanov, B. 299
 Khristianovich, S. A. 109, 251
 Kiely, E. R. 493
 Kiepert, L. 232, 242, 255
 Kilburn, T. 445
 Kimball, R. B. 385
 Kind-Schaad, G. 60
 King, G. W. 27-29, 60, 188, 243, 255, 355, 545, 547
 King, L. V. 230, 481
 King, R. I. 304, 385
 King, R. W. P. 481-482
 Kircher, E. A. 30
 Kirchhoff, G. R. 505
 Kirkham, W. J. 423, 450
 Kirschbaum, H. S. 512
 Kirschner, 449
 Kitover, K. A. 368
 Klemperer, W. B. 385
 Kline, M. 305-306
 Knauss, H. P. 548
 Knott, C. G. 224, 397
 Knutson, R. G. 385
 Kober, H. 103, 368
 Koehler, J. S. 212
 Kohlschütter, A. 116
 Kondo, T. 180
 Koons, Florence 431
 Kopal, Z. 37, 60, 112-114, 190-191, 194-195, 197, 473
 Kopper, J. M. 512
 Korn, G. A. 441
 Kornei, O. 438
 Koshlĭakov, N. S. 26, 41-42
 Kourganoff, V. 307
 Kraitchik, M. B. 143, 177, 199, 357, 372, 531
 Krall, G. 356
 Krasnushkin, P. 107
 Kratzer, A. 137
 Kreith, F. 385
 Krieger, F. J. 385
 Kron, G. 222
 Krueger, C. N. A. 450
 Krüger, J. G. 171
 Krüger, J. H. L. 86
 Kruse, K. H. W. 144
 Krylov, A. 127
 Kuehni, H. P. 385
 Kulik, J. P. 22, 222
 Kulikov, D. K. 21
 Kummer, E. E. 104, 477, 523
 Kurtz, A. K. 135
 Kusner, J. H. 385
 Kutta, M. W. 443
 Kuznefsev, P. I. 186
 Lacroix, A. 84
 Laderman, J. 16
 Lafferty, R. E. 135
 Lagerstrom, P. 385
 Lagrange, J. L. 63, 82, 98, 302, 325, 358, 401, 414, 464, 466, 469, 472, 487, 524
 Laguerre, É. N. 26, 41, 103-104, 167, 365, 532
 Lahiri, D. B. 23, 177
 Laitone, E. V. 385
 Lake, C. D. 149
 LaLande, J. J. F. 143, 391, 396, 557, 559
 Lambert, J. H. 145, 170-172, 199, 222-223, 225, 250, 419, 526
 Lamé, G. 101, 104, 524
 Lanczos, C. 17, 120, 385, 499
 Landau, E. 550
 Landau, H. G. 208
 Landen, J. 230-231, 238, 241, 269
 Lane, W. 186, 199
 Lange, N. A. 251
 Langer, R. E. 187, 477
 Laplace, P. S. 61, 104, 106, 178-179, 182-184, 222, 229, 237, 239, 252, 299, 341-345, 350, 373, 418, 470, 476, 515, 523
 Lapushkin, 420
 Lapworth, N. 385
 Larkin, J. J. 385
 Larsen, H. D. 466
 Láska, W. 232, 234-235, 242, 255, 482
 Latter, A. L. 385
 Laughton, J. K. 224
 Laurent, T. 492
 Lawler, Jane M. 385
 Lax, M. 107
 Lebell, D. 385
 Lebesgue, H. 543, 550
 LeCaine, J. 526
 Lecolazet, R. 369
 LeCorbeiller, P. 385
 Lee, L. K. 385
 Lefschetz, S. 382, 385
 Legendre, A. M. 16-17, 27, 64, 89, 99, 103, 105, 143, 167, 186, 194, 223, 231-233, 235, 237, 239, 241-244, 246, 248, 251-252, 255-258, 261-262, 266, 268-272, 274-275, 278, 280-281, 304, 306-307, 314, 331, 334, 337, 339, 365, 369, 470-472, 484, 525, 533
 Lehmer, D. H. 21-24, 61, 88, 95-97, 120, 131, 143, 176-177, 206, 227, 298-299, 308, 330, 337, 339, 357-358, 368, 372, 382, 385, 414, 417, 451, 468, 473, 486, 494, 496-497, 518-519, 531-532, 551
 Lehmer, Mrs. D. H. 564

- Lehmer, D. N. 143-144, 146, 222, 334, 358, 452, 531
 Leïbin, A. 222
 Leibniz, G. W. 136-137, 493
 Leiner, A. L. 326, 541
 Leipper, D. F. 385
 Leitner, F. 101
 Leon, H. I. 385
 Leontief, W. W. 161, 166, 436
 Leupin, E. 136
 Leuschner, A. O. 418
 Levallois, J. J. 87
 Leverrier, U. J. J. 237, 256
 Levin, Doris 479
 Levin, J. H. 133, 209
 Levine, H. 524
 Levy, H. 239, 252, 256
 Lévy, L. 230, 232, 235, 242, 256, 263, 267, 274-275, 278, 314, 449
 Lewis, S. N. 385
 Licklider, J. C. R. 385
 Liebmann, H. 343-344, 350
 Liechtenstein, P. 562
 Lienard, R. 358
 Liesegang, F. P. 203
 Ligowski, J. O. W. 201, 232, 242, 256
 Lilley, S. 213
 Lindsay, J. L. 26th *Earl of Crawford* 331, 558
 Lindsay, R. B. 484, 496
 Lindvall, F. C. 512
 Linstone, H. A. 385
 Lion, A. 379
 Lipkis, R. 385
 Littlewood, J. E. 399-400
 Ljūsternik, L. A. 299, 314
 Livingston, H. M. 350, 373
 Locanthi, B. N. 512
 Lodge, A. 25, 143, 186, 335-339, 514
 Loe, Alice G. 179
 Lo-Ho 447
 Lohse, W. O. 143
 Lommel, E. C. J. 103, 143, 186, 336, 550
 Long, M. V. 385
 Loranthe, B. 385
 Lorell, J. 385
 Lorentz, H. A. 412
 Lorne, J. 385
 Loss, H. 385
 Lotkin, M. 133, 210
 Love, A. E. H. 106, 335
 Lovett, D. B. 385
 Lowan, A. N. 64, 107-108, 143, 173, 187, 203, 234, 250, 254, 256, 315, 414, oppo. 453, 466, 494-495, 522
 Loxhay, 235, 280
 Lubkin, S. 50, 323, 327, 380, 431, 445, 541-542, 545
 Lucas, É. 142-143, 496, 518
 Lucas, F. 328-329
 Ludlam, A. E. 25
 Ludolf van Ceulen 562
 Lukacs, E. 58
 Lukoff, H. 491
 Luth, P. A., Jr., 385
 Luther, M. 552
 Luxenberg, H. 385
 Macaulax, M. 385
 McCann, G. D. 382, 386, 511-512, 532
 McCarthy, J. 386
 McClellan, J. P. 386
 McClintock, F. A. 386
 Maccoll, J. W. 37-38, 40
 McCool, W. A. 542
 McCormick, C. W. B. 386
 Macdonald, H. M. 335
 McEuen, A. H. 386
 McEwen, G. F. 386
 Macfarlane, G. G. 418, 475
 McFarlane, M. D. 386
 MacGregor, W. 242, 256
 Mach, E. 36-39, 198-199, 206, 522
 MacInnes, Janet 330
 McKay, A. T. 240, 256
 McKay, D. M. 512
 McLachlan, N. W. 183, 185
 MacLane, G. R. 188
 MacLean, M. 25
 Macleish, K. G. 440-441, 452
 McMahan, J. 305
 MacMahon, P. A. 335
 McMillan, B. 382, 386
 McNamee, J. 246, 252
 MacNeal, R. H. 385, 512
 MacNee, A. B. 491
 MacNeille, H. M. 385
 McNulty, W. P. 386
 McPherson, D. E., Jr. 386
 McPherson, J. L. 121, 133-134, 380, 446
 McQuitty, J. V. 135
 MacRobert, T. M. 16, 117, 449-450
 Magnus, W. 103, 116, 368, 522, 531
 Mahler, K. 23
 Mahler, Mary L. 524
 Maier, O. C. 381, 385
 Mainland, D. 362
 Maker, F. L. 385
 Mallock, R. R. M. 137
 Malmberg, G. 492

- Malone, Helen 407, 426
 Mandelbrot, B. B. 385
 Manley, R. G. 134
 Mansell, W. E. 339
 Marchant Calc. Machine Co. 375
 Marchisio, P. 88, 93
 Marcum, J. I. 521
 Mark, R. S. 385
 Markov, A. A. 97, 143
 Marsh, H. W., Jr. 385
 Marshall, B. O., Jr. 491
 Martelli, G. F. 197
 Marth, A. 419
 Martin, A. 143
 Martin, F. C. 386
 Martin, F. T. 386
 Martin, W. T. 546
 Masal, H. 237, 256
 Mascart, É. É. N. 25, 238, 255-256
 Maseres, F. 172, 224
 MIT, 37, 40, 107, 175, 188, 197, 447
 Mathews, G. B. 117, 335, 423, 449-450
 Mathieu, E. L. 101, 103-104, 184-185, 366, 525
 Mauchly, J. W. 57, 129, 133-134, 380, 382, 386, 437, 442, 444, 491-492, 540
 Mauchly, Kathleen R. 386
 Maxfield, J. P. 386
 Maximilian II 554, 560
 Maxwell, J. C. 238, 256, 481
 Mayer, Maria 547
 Mayo, L. R. 61
 Meissel, E. D. F. 25, 102, 117, 181, 186, 235, 256, 261, 263, 267, 275-278, 314, 333, 339, oppo. 399, 416, 423, 449-450, 549
 Meixner, J. 524-525, 531
 Melahn, W. S. 386
 Melanchthon, P. 552-553
 Mellin, R. H. 104, 475-476
 Mengel, A. S. 386
 Mercator, N. 44, 110, 223-224, 530
 Mercner, R. O. 138
 Merfield, C. J. 249, 256, 269, 272, 307, 314
 Meriam, J. L. 539
 Merrick, W. D. 386
 Merrifield, C. W. 226
 Merrill, J. E. 193-194
 Merrington, Maxine 360
 Merritt, H. E. 462
 Mersenne, M. 142, 398
 Mersman, W. A. 386
 Merwin, R. 184
 Mesick, B. S. 386
 Metius, *see* Adriaen
 Metropolis, N. 386, 547
 Mettler, R. F. 386
 Meyer zur Capellen, W. 137
 Michal, A. D. 386
 Michell, J. H. 25, 62
 Michelson, S. 227
 Middleton, D. 482
 Mie, G. 483-484
 Mikami, Y. 560
 Mikhlin, S. G. 251
 Miles, J. W. 386
 Miller, A. 386
 Miller, F. G. 166, 437
 Miller, J. C. P. 31, 41, 61, 108, 118-119, 121, 132, 143, 199, 203, 223, 229-230, 237, 240-241, 263, 276-277, 305, 314-315, 333, 336-340, 355, 371, 400, 407, 426, 450, 495, 522, 531, 551
 Miller, J. J. 416
 Miller, J. M. 238-239, 256, 258
 Milne, W. E. 108, 468, 547-548
 Milne-Thomson, L. M. 86, 223, 225, 232-233, 235, 244, 246-247, 256, 264, 276, 278-279, 333, 338, 468
 Minding, F. 482
 Minkowski, H. 96
 Minvielle, L. 386
 Mises, R. 545
 Mitchell, D. V. 19
 Mitchell, F. W. 386
 Mitchell, H. F., Jr. 166, 206, 462
 Mitchell, K. 477
 Mitchell, W. D. 386
 Mitrinovich, D. S. 463
 Mittelman, Beatrice S. 414
 Molina, E. C. D. 301
 Molk, J. 234, 247, 257, 260
 Mongan, C. E., Jr. 386
 Monroe Calc. Machine Co. 375
 Monteil, C. 514
 Montessus de Ballore, R. de 232, 235, 242, 257
 Mood, A. M. 386
 Mooers, C. N. 444
 Moon, P. 175-176
 Moore, B. L. 435
 Moore, E. F. 488
 Moore, E. H. 389
 Moore, J. 233, 257, 276, 314
 Moore, J. R. 386
 Moore Sch. Electr. Engin., Philadelphia 379, 427, 433, 440, 442, 489, 540
 Moretti, G. 116
 Morgan, S. P., Jr. 105, 107
 Morgan, W. D. 558-559, 562-563
 Morikawa, G. K. 386

- Morrill, C. D. 386
 Morris, A. J. 386
 Morrisson, R. 386
 Morse, P. M. 25, 101, 107, 526
 Morton, P. L. 382, 386
 Mose, H. E. 20
 Moseley, H. 232, 257, 331
 Mosier, C. I. 135
 Moskovitz, D. 232, 242, 259, 278, 314
 Mossotti, O. F. 225
 Mowbray, A. C. 386
 Moxon, J. 224
 Müller, A. 553, 559-560
 Müller, O. 20, 40
 Müller, W. C. 298
 Muller, M. 386
 Munroe, H. D. 386
 Murnaghan, F. D. 141-142
 Murray, F. J. 138, 330
 Myers, J. 386
 Mynall, D. J. 512

 Nachod, C. P. 447
 Nadel, A. 386
 Nagaoka, H. 231-232, 234-239, 247, 257, 259, 276, 314
 Naiman, J. M. 386
 Nair, K. R. 363-364
 Napier, J. 67, 136, 143, 224-225, 372, 397, 514, 552, 563
 Naske, C. 482
 NAML (Nat. Appl. Math. Labs.) 64-65, 445
 National Bureau of Standards (NBS) 63-64, 238-239, 253, 257, 259, 286, 326, 350, 431, 438-439, 443, 488, 490, 496, 515-516, 519, 522-523, 541, 544-545, 547
 NBS Computation Lab. (NBSCl) 25-26, 35, 40, 42-43, 65, 88, 101, 107-108, 116, 120, 169, 173, 176, 180, 187, 201, 203, 205, 227, 231-235, 239, 246, 257, 296, 315-317, 352, 371, 407, 414, 436, 472, 477, 483, 485, 494, 515-516, 523, 545
 NBSINA 381, 425, 478, 485, 544-547
 NBS Machine Development Lab. (NBSM DL) 44, 53-54, 56-57, 121, 128, 206, 210-213, 215, 317, 327-328, 373, 378-380, 426, 432, 440-442, 445, 486, 541-542
 NBSMTC 481
 Nat. Defense Res. Committee (NDRC) 127, 373
 Navier, C. L. M. H. 37, 437
 Nayler, J. 25
 Nehari, Z. 546
 Neiburger, M. 386
 Neishuler, L. 299
 Nelson, E. 386
 Nelson, L. 386, 547
 Neumann, C. G. 336
 Neumann, J. 2, 50, 54, 56, 58, 128, 133, 166, 216, 324, 381, 386, 439, 446, 462, 541, 546-547
 Neville, E. H. 333, 336, 338-340, 469
 Newcomb, S. 234, 237, 257
 Newman, A. B. 178, 240, 257
 Newman, F. W. 201, 231-232, 240-241, 247, 257, 368, 451, 477, 485, 549, 551-552
 Newman, M. H. A. 214, 542
 Newton, I. 27, 100, 132, 351, 358, 414, 469-470, 472, 486, 543, 553
 Newton, R. R. 474
 NYWPA, 521
 Neyman, J. 373, 547
 Nicholas de Cusa 562
 Nichols, N. B. 188
 Nicholson, J. W. 335-336, 338, 367
 Nielsen, K. L. 302
 Nielsen, N. 143, 481
 Niepmann, H. W. 386
 Niepmann, K. 386
 Nilson, E. N. 386
 Niven, W. D. 256
 Nogrady, H. A. 178
 Nolde, G. V. 386
 Norén, G. 237, 258
 Norwood, R. 224
 Nowacki, Miss H. 203
 Numerov, B. 86
 Nye, G. 386
 Nyquist, H. 179
 Nyström, E. J. 244, 258

 Oberhettinger, F. 103, 116, 368, 522, 531
 Oberreit, 171
 O'Brien, P. F. 386
 Ocagne, M. d' 136
 Odhner, W. T. 136-137
 Odle, J. W. 386
 Örley, L. 452
 Ogura, S. 420
 Okamatu, M. 176
 Okaya, T. 203
 Oldfield, B. G. 386
 Olds, E. B. 135
 Olds, R. H. 386
 Olmsted, E. G. 386
 Olson, F. C. W. 240, 258-259
 O'Malley, C. A. 386
 O'Neal, R. D. 386, 438, 441, 444, 452
 O'Neill, R. R. 386

- Oppolzer, E. 396
 Osbon, W. O. 512
 Osborn, J. A. 242, 258
 Osborn, P. 386
 Oseen, C. W. 481
 Osgood, W. F. 258
 Ostrogradskii, M. B. 145, 531
 Ostrowski, A. 545
 Othmer, D. F. 389
 Otho, L. V. 394-395, 554-562
 Oughtred, W. 136, 372, 398
- Packh, D. C. de 222
 Padé, H. 260
 Page, C. H. 128, 444, 489
 Page, L. 101
 Pagel, F. L. 530
 Paine, A. C. 386
 Paine, W. O. 386
 Palm, C. C. R. A. 98, 492
 Palmer, R. 491-492
 Pankhurst, R. C. 121, 407
 Panse, V. G. 360
 Pareto, V. 300
 Parker, J. B. 31-32, 34, 110, 141
 Parkin, T. R. 386
 Parks, R. J. 386
 Pascal, B. 136, 493
 Patterson, G. W. 386, 489
 Pauling, L. 60
 Peake, H. J. 308
 Pearson, E. S. 336
 Pearson, K. 67, 89, 143, 180, 241, 255, 258, 268, 270-272, 306-307, 335, 338, 372-373, 485
 Peebles, G. H. 386
 Peirce, B. O. 143, 232, 242, 251, 258, 482
 Peirce, C. 386
 Pell, J. 172, 335, 338
 Pemberton, J. C. 61, 386
 Pendergrass, J. T. 326
 Penteado, F. 114-116, 145
 Pepinsky, A. 386
 Pepinsky, R. 544
 Pérès, J. 431
 Pernot, F. E. 201
 Peters, Hanna 203
 Peters, J. T. 43, 86, 88, 136, 143-144, 146, 168, 172, 176, 199, 203, 205, 297-298, 315, 336, 339, 358, 498, 515-517
 Peterson, R. P. 386
 Petit, W. H. 386
 Petit-Bois, G. 482
 Pettit, J. T. 178, 199
 Petty, C. M. 386
- Pfeiffer, J. 490
 Philips, N. V. 481, 524
 Phillips, R. S. 188, 386
 Piatt, D. R. 149
 Picard, É. 81, 306
 Pickering, W. H. 386
 Picone, M. 356
 Pidduck, F. B. 238, 258, 499
 Pierce, F. 386
 Pierce, T. A. 531
 Piper, E. M. 386
 Pipping, N. 96, 519
 Pitiscus, B. 89, 371, 390-398, 498, 515-516, 552, 556-560, 562
 Pitt, G. J. 412
 Placzek, G. 108
 Plana, J. 235, 258, 277-278, 314
 Planck, M. K. E. L. 175-176
 Plesset, M. S. 386
 Plummer, H. C. 249
 Pluvinage, P. 369
 Poehlmann, Jeanne 386
 Poetius, J. M. 172
 Poggendorff, J. C. 86, 226, 449, 559
 Poincaré, H. 426
 Poiseuille, J. L. M. 437
 Poisson, S. D. 61, 99, 179-180, 301, 540
 Polachek, H. 386
 Poleni, G. 136
 Poletti, L. 532
 Pollard, A. W. 397
 Pollard, W. G. 188
 Pólya, G. 399-400
 Pomerene, J. H. 378, 440
 Poole, E. G. C. 184
 Pooler, L. G. 496
 Popovich, M. 386
 Porath, F. R. 386
 Poritsky, H. 545
 Porri, 552, 560
 Porter, R. J. 43
 Postel, E. E. 386
 Postley, J. A. 386
 Potin, L. 89, 223, 225, 233, 235-236, 241, 255, 258, 268, 275, 278, 307, 314, 449
 Potter, A. 34
 Poulet, P. 120
 Powell, E. O. 477, 485
 Powers, R. E. 496
 Prätorius, J. 554, 560
 Prager, W. 93
 Present, R. D. 188
 Price, B. 335
 Pringle, R. W. 61
 Prokeš, A. 20, 40

- Proshko, V. M. 299
 Prowe, L. 560
 Prytz, H. 138
 Ptolemy, 560, 562
 Puckett, W. T., Jr. 386
 Purdie, R. H. 389

 Quade, E. S. 387
 Quastinsky, E. S. 387

 Raab, S. 237, 258
 Rademacher, H. 131, 380, 382, 387, 437
 Ragot, C. L. 84
 Rahmel, H. 380
 Rahn, J. H. 172
 Raiford, T. E. 412
 Rajchman, J. A. 133, 435-436, 444, 544
 Rajna, M. 20, 40
 Ramanujan, S. 23, 177, 298, 468, 550
 Ramus, P. 559
 Raphson, J. 132
 Rasmussen, C. 387
 Rawlins, R. E. 387
 Ray, B. S. 27, 29
 Rayleigh, J. W. Strutt, *Baron* 238, 258-259, 335, 338, 450, 483, 495-496
 Raytheon Manuf. Co. 286, 295, 317, 327, 382, 446, 540
 Rea, E. A. 387
 Read, D. N. 330
 Reck, M. 137
 Redgrave, G. R. 397
 Redheffer, R. 389
 Rees, Mina 133, 380, 544
 Reeves Instr. Corp. 326-327, 501
 Regiomontanus, 553, 562
 Reid, W. T. 387
 Reinhardt, F. 493
 Reinhold, E. 553
 Reiss, S. 522
 Reiz, A. 26, 40, 416, 473
 Renner, H. W. 60
 Reno, F. V. 242, 246, 258
 Renwick, W. 490
 Reynolds, W. A. 60, 199, 437
 Rheticus, G. J. 296-297, 390, 394-398, 515-516, 531, 552-560, 562
 Rhodes, *Mrs. Ida* 134, 380, 382, 387
 Rice, S. O. 307-308
 Rich, K. C. 387
 Richards, H. W. 548
 Richardson, H. 389
 Riche de Prony, G. C. F. M. 394-396, 559
 Richmond, D. E. 387
 Richmond, H. W. 95, 423

 Richter, G. F. 172
 Ridenour, L. N. 387
 Riemann, G. F. B. 366, 475-476, 546
 Riordan, J. 179
 Ritson, D. M. 415
 Rívard, D. F. 143
 Robbins, C. I. 414
 Robbins, F. 234, 237, 249, 254, 258, 336
 Robbins, L. 387
 Robbins, W. 387
 Robert, H. C., Jr. 23
 Roberts, R. C. 199
 Robinson, C. 340
 Robinson, G. 98, 116, 419, 468
 Rock, Sibyl M. 61, 387
 Rodes, H. P. 387
 Rodgers, L. M. 102
 Rodrigues, *see* Azeredo Rodrigues
 Röntgen, W. C. 259
 Rogers, S. 387
 Rogers, T. A. 387
 Rohrer, J. 88
 Rolle, M. 329, 469
 Romanus, A., *see* Roomen, A. van
 Romig, H. J. 179
 Roney, R. K. 387
 Room, T. G. 544
 Roomen, A. van 559
 Rosa, E. B. 232-234, 238-239, 251, 253, 256, 258-259
 Rose, M. E. 545
 Rosen, E. 553, 560
 Rosen, S. 387
 Rosenbach, J. B. 232, 242, 259, 278, 314
 Rosenblueth, A. S. 543
 Rosenhead, L. 31, 61, 108, 119, 203, 223, 229-230, 237, 240, 245, 259, 276-277, 305, 314, 371, 450, 495, 531, 551
 Rosenthal, 171
 Rosenthal, D. 387
 Ross, C. 545
 Rosser, J. B. 474
 RSMTTC (R. Soc., Math. Tables Comm.), 333, 337, 339
 Rubbert, F. K. 447
 Rubinoff, M. 438
 Runge, C. 443
 Runkle, J. D. 237, 259, 278, 314
 Russell, A. 232-233, 239, 259
 Russell, H. N. 113-114, 192, 195, 199
 Russell, J. B. 133, 365
 Russell, W. T. 387
 Russo, F. 212
 Rust, A. 420
 Rutland, D. 387

- Ryan, E. F. 387
 Ryayec, E. A. 387
 Rybner, J. 173-174, 199, 516-517
 Rydberg, J. R. 330
 Rylands, T. G. 498
- Sachs, A. J. 169-170
 Sadler, D. H. 31-32, 34, 110, 112, 141, 204,
 310, 333, 336-337, 339, 362, 531, 548
 St. Hilaire, M. 309
 St. John, E. E. 387
 Saint-Venant, B. de 483
 Sainte-Lagüe, A. 514
 Sakai, A. 532
 Sakamoto, S. 223, 225
 Sakuraba, S. 107
 Sakurai, S. 231-232, 234-236, 238, 247, 257,
 259, 276, 314
 Salamandra, G. D. 109
 Salamonovich, G. M. 387
 Salin, J. 203
 Salvosa, L. R. 316
 Salzer, H. E. 18, 41, 64, 97, 107-108, 119-
 121, 169, 187, 205, 316-317, 358, 414,
 424, 472, 515-516, 519, 532
 Samoilovalakhontova, *Miss* N. S. 89, 232,
 234-235, 241-242, 259, 264, 266, 272,
 276, 278, 307, 314
 Sampson, J. 498
 Sampson, R. A. 392, 397
 Sandeman, I. 101
 Sandon, F. 333, 338
 Sang, E. 143
 Sarahan, B. L. 387
 Sarrus, P. F. 518
 Sarton, G. 563
 Sassenfeld, H. M. 463
 Sasuly, M. 300
 Sauer, R. 197-198
 Saunders, F. 387
 Savage, *Mrs.* Grace O. 498, 559
 Savage, L. J. 547
 Savedoff, Lydia 544
 Savidge, H. G. 335
 Savidge, W. L. 25
 Sawyer, W. W. 399-400, 473
 Saxon, D. S. 387
 Scarborough, J. B. 468
 Schady, 22
 Schaeffer, A. C. 387, 546
 Schelkunoff, S. A. 306, 387, 482
 Schell, E. 544
 Schendel, J. W. 387
 Scherer, 136
 Schering, E. J. 252
- Schey, O. 387
 Schiffer, M. 546
 Schlömilch, O. X. 103, 105, 233, 235, 253,
 259, 279, 281, 314
 Schmidt, J. G. 232, 241-242, 259, 266, 279,
 281
 Schmutzler, A. E. 389
 Schöner, J. 553
 Schomaker, V. 60
 Schomann, 355
 Schott, G. A. 549
 Schuck, O. H. 134
 Schürba, W. 146, 452
 Schultz, O. T. 240, 258-259
 Schulze, F. 19, 40
 Schunman, G. A. 387
 Schutz, B. 387
 Schwarz, H. A. 103, 234, 247, 259-260
 Schwarzschild, M. 160-161
 Schwinger, J. 524
 Scoville, R. R. 387
 Scultetus, A. 390
 Sédillot, J. J. 226
 Seeber, R. R. 212-213, 327-328, 382, 387,
 481
 Seeger, R. J. 436
 Seewald, F. 472
 Segal, B. I. 299
 Segner, J. A. 226
 Segner, J. W. 226
 Seidel, P. L. 221, 350
 Seidel, W. 387
 Seiden, Esther 373
 Seifert, H. S. 387
 Séligmann-Lui, G. 256
 Sepmeyer, L. W. 387
 Seth, B. R. 483
 Shaffer, P. A., Jr. 60, 387
 Shannon, C. E. 491-492
 Shapley, H. 113-114, 192-193, 199
 Sharp, A. 143
 Sharpe, H. D. 61
 Sharpless, T. K. 57, 130, 327, 379-380, 434,
 444-445, 540, 542
 Shatrovskii, L. I. 299
 Shea, J. D. 300
 Sheehy, M. J. 387
 Sheppard, C. B. 130-131, 143, 438, 444, 470
 Sheppard, W. F. 143, 180, 337, 339
 Sherman, Iva 352
 Sherman, L. 387
 Sherwin, H. 562
 Sherwood, T. K. 240, 259
 Shiras, R. N. 387
 Shook, C. A. 237, 241, 251, 259

- Shoor, B. A. 387, 547
 Shor, W. 547
 Shortley, G. 350
 Sidgwick, Mrs. H. 238, 258-259
 Siegel, Roselyn 387, 545
 Silberstein, L. 232, 235, 242, 259
 Silverman, L. L. 387
 Simon, L. E. 133
 Simpson, T. 470
 Simpson, T. W. 494
 Singer, T. 356, 371, 481
 Sink, R. F. 387
 Sitterly, B. W. 195
 Skinner, Miss P. M. (Mrs. Truscott) 108, 116
 Skogland, J. F. 176
 Skogstad, Anna L. 387
 Slosse, E. A. 21, 88-89
 Slutz, R. J. 378, 440, 443, 541, 545
 Sluyter, L. J. 387
 Small, A. M. 387
 Smekal, A. 240-241, 259
 Smiley, C. H. 34, 36, 59, 112, 115-116, 139, 145, 196-197, 311, 316, 371, 420, 422, 529, 531
 Smirnoff, M. V. 387
 Smirnov, N. V. 520
 Smith, B. A. 25, 62
 Smith, C. V. L. 380, 387
 Smith, D. B. 102
 Smith, E. R. 26, 416, 473
 Smith, G. L. 387
 Smith, H. J. S. 92, 334
 Smith, L. B. 18-19
 Smith, O. K. 314, 387
 Smith, R. 549
 Smith, R. C. T. 414
 Smithson, J. L. M. 245, 254, 260, 516
 Smoliar, G. 491
 Snedecor, G. W. 363-364
 Snell, W. 451, 561-562
 Snow, C. 176
 Snyder, Frances E. 350, 373
 Snyder, R. L. 327, 382, 387, 440, 489
 S.A.E.W.E.B. (Soc. Automotive Engins., War Engin. Bd.), 232-233, 247, 259
 Sørensen, K. S. 516
 Sokolnikoff, E. S. 539
 Sokolnikoff, I. S. 387, 539, 545
 Soldner, J. 308, 314
 Sollins, A. D. 205
 Sommer, H. H. 387
 Sonin, N. 97, 147
 Sorgenfrey, R. H. 387
 Soroka, W. W. 448
 Sosbee, H. F. 387
 Souders, M. 387
 Southwell, R. V. 57, 132, 546
 Sowers, N. E. 387
 Sparks, C. M. 238, 251, 259
 Sparrow, C. M. 479
 Speidell, J. 371
 Speiser, A. 170-171
 Spence, W. 42, 226, 477
 Spenceley, G. W. 89-91, 205, 232, 234, 236, 245-246, 260, 262-263, 266, 269, 275, 279-280, 314, 334, 516
 Spenceley, Rheba M. 89-91, 232, 234, 236, 245-246, 260, 262-263, 266, 269, 275, 279-280, 314, 334, 516
 Spencer, D. C. 546
 Spielrein, J. 237, 239, 260
 Spinrad, B. I. 545, 547
 Sprague, R. E. 387
 Stamford, F. K. 171
 Stankiewicz, Lidia 479
 Starr, C. 387
 Staton, J. 483
 Stearns, E. V. B. 387
 Steck, M. 145
 Steed, D. V. 387
 Steele, F. 387
 Steffensen, J. F. 407, 468
 Stegemann, M. 255
 Stein, G. 545
 Stein, J. 43, 168, 315, 358
 Stein, M. L. 387
 Steinbrenner, G. 89, 136
 Steiner, O. T. 542
 Steinhaus, H. 407
 Steinitz, W. 141
 Steklov, V. A. 251, 299
 Stelson, H. E. 412
 Sterneck, R. D. 24
 Stevens, J. 144
 Stevens, W. L. 333, 337, 359
 Stevenson, A. C. 483
 Stevenson, C. H. 387
 Stevin, S. 143-144, 224-225, 451
 Stewart, J. Q. 170
 Stibitz, G. R. 1-2, 54, 127-128, 133, 221, 329, 376, 380, 433-434, 446, 491-492, 544
 Stickney, M. E. 387
 Stieltjes, T. J. 42, 143, 147, 244
 Stine, V. 387
 Stirling, J. 463, 470, 551
 Stoker, R. L. 387
 Stokes, G. G. 37, 334, 366, 437, 514
 Stone, A. H. 197-198

- Stone, C. 30
 Stracke, G. 419
 Strain, D. C. 387
 Stratton, J. A. 101, 481, 526
 Street, K. E. 387
 Strohm, R. F. 447
 Strutt, J. W. *see* Rayleigh
 Strutt, M. J. O. 100-101
 Struve, K. H. 66, 103, 340, 365
Student, pseud., see Gossett, W. S.
 Sturm, R. 487
 Sugar, A. C. 387
 Sukhatme, P. V. 24
 Sullivan, R. J. 387
 Summers, R. 387
 Suter, H. 227
 Suthann, R. A. 387
 Svoboda, A. 447
 Swanson, Margaret D. 387
 Swanson, N. M. 387
 Sweeney, D. 186, 199
 Swift, I. H. 387
 Swift, J. D. 387
 Swinford, L. H. 529, 546
 Sylvester, J. J. 335, 549
 Szász, O. 64, 387
 Szegő, G. 416, 545-546
- Tabor, L. P. 433, 489
 Tai, C. T. 481
 Talbot, A. N. 452
 Tallqvist, A. H. H. 143, 186, 244, 260, 521
 Tannery, J. 234, 247, 257, 260
 Tasker, H. G. 387
 Tawney, G. L. 389
 Taylor, B. 181, 405-407
 Taylor, E. K. 135
 Taylor, G. I. 37-38, 40, 106-107
 Taylor, H. 224-225
 Taylor, M. 89
 Taylor, R. 133
 Taylor, T. T. 387
 Taylor, W. J. 63
 Tea, P. L. 390
 Terman, F. E. 238, 260
 Ternouth, E. J. 337, 339-340
 Thébault, V. 22
 Theodorsen, T. 545
 Thiele, T. N. 470
 Thoman, F. 261, 275
 Thomas, D. E. 136, 308
 Thomas, L. H. 544
 Thomas, T. Y. 387
 Thompson, A. J. 67, 143, 333, 336-340, 366
 Thompson, Catherine M. 360
 Thompson, J. S. 387
 Thompson, P. E. 387
 Thomson, J. J. 256
 Thomson, W. *see* Kelvin
 Thorne, C. J. 387
 Tietze, H. 308
 Tiller, F. M. 330
 Tillitt, H. E. 387
 Tillotson, G. 552
 Tillotson, Kathleen 551-552
 Tippett, L. H. C. 426
 Tishman, Rose 387
 Tisserand, F. 234
 Titchmarsh, E. C. 182, 366, 475-476
 Titus, J. 388
 Tjänste, 213
 Toben, G. 388
 Tocher, J. F. 336
 Todd, C. J. 388
 Todd, J. 57-58, 64, 205, 215-216, 227, 333, 338, 382, 388, 451
 Todd, Olga T. 388, 399
 Tölke, F. 25
 Tolstov, Ī. G. 61
 Tolve, L. A. 388
 Tompkins, C. B. 133, 380, 382, 388, 544
 Toops, H. A. 135
 Topping, J. 25
 Torrès Quevedo, L. 136
 Tramontini, V. N. 388
 Traub, E. H. 102, 332
 Travis, I. A. 129, 138, 489
 Traxler, A. E. 136
 Tricomi, F. 365
 Tropfke, J. 449, 558
 Trowbridge, W. P. 62
 Truell, R. 305
 Truran, J. W. J. 388
 Truscott, *Mrs. see* Skinner, *Miss* P. M.
 Tschunko, H. F. A. 463
 Tsesevich, V. P. 190-195, 199
 Tsien, Hsue-Shen 197-198
 Tsu Ch'ung-Chih 560
 Tsukhanova, O. A. 109
 Tucker, L. 135
 Tuckerman, L. B., Jr. 488
 Tudor, Mary J. 388
 Tukey, J. W. 415, 547
 Tumbleson, R. C. 213
 Turing, A. M. 57, 213-214, 216, 462
 Turnbull, H. W. 224
 Turner, H. H. 143
 Tuttle, K. B. 388
 Tyler, A. W. 388, 436, 441, 444
 Tyler, E. F. 388

- Tyler, G. W. 388
 Tyndall, J. 483
 Tysser, *Mrs.* R. St. H. (*later Dr.* R. O. Cashen) 333, 337

 Ugarov, V. A. 369, 371
 Uhler, H. S. 42-43, 143, 315, 355, 371, 398
 Ulam, S. M. 382, 388, 546
 Ulman, J. N., Jr. 489
 U. S., Air Force 445
 U. S., Atomic Energy Commission 186, 188
 U. S., Bureau of Labor Statistics 161
 U. S., Coast and Geodetic Survey 424, 485
 U. S., Hydrographic Office 31, 33-36, 40, 43-44, 139-141, 309-311, 315-316, 529
 U. S., National Advisory Committee for Aeronautics 199, 522, 524, 526
 U. S., Navy, Naval Research Lab. 308, 417, 423, 446
 U. S., Navy, Office of Research and Inventions 107, 116
 U. S. S. R., Hydrographic Administration 420
 Urata, S. 532
 Ursinus, B. 89

 Vahlen, K. T. 562
 Vajda, S. 138
 Valentine, F. A. 388
 Van de Hulst, H. C. 526
 Van der Pol, B. 108
 Vandrey, F. 365
 VanDyke, H. A. 388
 Van Orstrand, C. E. 200-201, 223, 225, 371
 van Veen, S. C. 230, 416
 Van Vliet, C. J. 388
 Van Wynen, K. G. 175
 Vand, V. 548
 Vanes, Olive E. 230
 Vassal, V. 223, 225
 Vavilov, S. 65
 Vazsonyi, A. 388, 545
 Vega, G. 136, 145, 396, 467, 561, 563
 Velander, E. 492, 544
 Verhulst, P. F. 235, 260, 266, 277, 280-281, 314
 Vernon, R. 388
 Verzuh, F. M. 380, 458, 462, 486
 Viète, F. 143, 394, 515, 560, 562
 Villey, J. 398
 Vincent, G. K. 340
 Viola, T. 244, 251, 260
 Vlacq, A. 562
 Voronoi, G. F. 531

 Waddell, B. L. 388
 Waddington, L. E. 134
 Wald, A. 98, 524
 Walfisz, A. 24
 Walford, C. 67
 Walker, R. M. 491
 Wallace, W. P. 388
 Wallis, J. 172
 Wallis, W. A. 547
 Walsh, J. E. 296, 388
 Walters, S. S. 388
 Walther, O. A. 97, 119, 137
 Ward, L. E. 388
 Ward, Mary C. 388
 Ware, W. H. 378, 440
 Waring, E. 423
 Warren, C. E. 512
 Warren, J. E. 388
 Warschawski, S. E. 545
 Washburn, H. W. 61
 Waterman, A. T. 381, 388, 439
 Watson, G. N. 66, 90, 235, 247, 298, 336, 352, 468, 479, oppo. 501, 531, 549-550
 Watson, T. J. 135, 145, 149, 161, 216-217, 491
 Wayland, J. H. 388
 Wayman, A. 388
 Wayne, A. 233, 260, 281, 314
 Weaver, J. H. 388
 Weber, 482
 Weber, E. 546
 Weber, H. F. 103, 336, 365-366, 499
 Weber, H. M. 499
 Webster, A. G. 25, 335
 Webster, J. W. 388
 Weems, P. V. H. 36, 109-110, 221
 Weidler, J. F. 391
 Weierstrass, K. T. W. 104, 223, 229, 234, 247, 249-250, 253-254, 259-260, 365, 449, 482, 563
 Weigand, L. 308, 314
 Weinberg, A. M. 187, 544
 Weinberg, J. W. 300
 Weinstein, A. 545
 Weinstein, B. 256
 Weinstein, J. 388
 Weissenstein, H. G. 138
 Welin, E. 323
 Weller, R. 350
 Wellmann, V. 237, 260
 Welmers, E. T. 388
 Wend, A. G. M. 192, 195
 Wenick, R. L. 388
 Wermer, J. 522
 Werner, J. 553, 560

- Westberg, R. 472
 Western, D. W. 30, 178
 Westhafer, R. L. 388
 Weyl, H. 399–400
 Wheatstone, C. 137
 Whelan, D. E., Jr. 388
 Whinnery, J. R. 388
 Whipple, F. L. 419
 White, W. B. 388
 Whitman, E. A. 232, 242, 259, 278, 314
 Whittaker, E. T. 90, 98, 104, 116, 235, 247,
 419, 468
 Whittaker, T. 67
 Whitwell, T. 336
 Widder, D. V. 545
 Widell, G. A. 492
 Widemnaun, J. A. 388
 Wiener, N. 543–544
 Wieselmann, I. L. 388
 Wigner, E. P. 187
 Wijngaarden, A. van 21
 Wilbur, J. B. 137
 Wilcox, D. E. 61
 Wilkas, B. C. 390
 Wilkes, M. V. 214–215, 333, 338, 490, 542
 Wilkinson, J. H. 132, 462, 542
 Wilks, S. S. 316, 364
 Willcox, W. F. 62
 Willers, F. A. 493
 Williams, D. 499
 Williams, F. C. 57, 214, 445, 491–492, 542
 Williams, K. P. 237, 260
 Williams, S. B. 2, 54, 433, 443,
 Wilsing, W. 388
 Wilson, J. 355, 518
 Wilson, O. B. 388
 Wilson, R. R. 547
 Wilton, J. R. 245, 260
 Wilts, C. H. 512
 Wingquist, E. 61
 Winston, C. 416
 Winter, Edna B. 388
 Wishart, J. 333, 336–339
 Witkowski, A. W. 233, 260
 Witt, G. 233, 237, 248, 260, 272, 307
 Wittke, H. 390, 467, 548
 Wittstein, T. 298
 Wölffing, E. 86, 449
 Wolf, R. 554, 560
 Wolfram, J. 171–172
 Womersley, J. R. 333–334, 338
 Woo, Mary 373
 Wood, H. A. 388
 Wood, W. L. 388
 Woodall, H. J. 357
 Woodbury, W. W. 388
 Woods, B. M. 201, 388
 Woodward, P. M. 415, 418
 Wrench, J. W., Jr. 18–19, 42, 66, 120, 203,
 262, 314–315, 423–424, 551, 562
 Wright, E. 223–225, 372
 Wright, E. M. 314
 Wright, Frances W. 44
 Wright, S. 225, 372
 Wrinch, Dorothy M. 336
 Wroński *see* Hoëne-Wroński
 Wü.schmidt, J. 560
 Wundheiler, A. W. 434
 Wyatt, Willa A. 212
 Wylie, P. E. 388
 Wyreen, J. 388
 Yamauti, Z. 176
 Yarden, D. 96, 119, 299, 314, 519
 Yates, F. 300, 359–360, 362, 515
 Yoder, R. M. 388
 Yonemura, 195
 Young, D. M. 546
 Young, W. E. 388
 Yowell, E. C. 388
 Ypei, N. 331
 Yuan, S. 369
 Yuster, S. T. 388
 Zagor, H. I. 326–327, 382, 388
 Zarqāla *see* Ibn al-Zarqāla
 Zartner, H. A. 388
 Zavrotsky, A. 97
 Zehan, F. W. 388
 Zeilon, N. 492
 Ziaud-Din, M. 24, 40
 Zimmermann, H. 136
 Zimmermann, L. 136, 412, 423
 Zinger, N. 21
 Zinner, E. 560
 Zizicas, G. A. 388
 Zubkov, P. I. 417