

Index

- (3 + 1)-free poset, *see* poset, (3 + 1)-free
- \ast , 476
- \square , 473
- \circ , 352
- \heartsuit , 219
- \heartsuit° , 537
- \odot , 533
- \S , 449
- 103,049, 213
- 310,952, 213
- 310,954, 213
- a_α , 334
- van Aardenne-Ehrenfest, T., 68, 69
- abacus, 517
- Abel polynomial, *see* polynomial, Abel
- Abel's identity, *see* identity, Abel's
- Abel, N., 127
- abelianization, of a formal series, 197
- Abhyankar, S., 251
- Abramson, M., 275
- action
 - of G on X , 350
 - of G by conjugation, 474
 - of \mathfrak{S}_n
 - on $\Lambda^k V$, 475
 - on $S(V^*)$, 475
 - on ordered pairs, 356
 - on k -subsets of $[n]$, 355
 - on $\binom{M}{k}$, 475
 - transitive, 350
- acyclic function, *see* function, acyclic
- acyclic orientation, *see* orientation, acyclic
- ADE, 248
- adjacent transposition, *see* transposition, adjacent
- adjoint linear transformation, *see* linear transformation, adjoint
- adjoint representation of $GL(n, \mathbb{C})$, *see* representation, of $GL(n, \mathbb{C})$, adjoint
- Adler, M., 506
- Aigner, M., 273
- Aissen, M., 544
- Aitken, A. C., 398, 401, 405, 532, 533
- Akin, K., 508
- Aldous, D., 214, 555
- algebra
 - descent, 548
 - graded, 287
 - Hopf, 342, 401
 - incidence, 482
 - of NC_n , 86
 - Lie, *see* Lie algebra
 - nilCoxeter, 497
 - of quasisymmetric functions, *see* quasisymmetric functions, algebra of
 - of symmetric functions, *see* symmetric functions, algebra of
 - Temperley–Lieb, 267
- algebraic differential equation, *see* equation, algebraic differential
- algebraic language, *see* language, algebraic
- algebraic, over $K[x]$, 160
- algebraic series, *see* series, algebraic
- algebraic topology, 503
- algorithm
 - Hillman–Grassl, 548
 - RSK, *see* RSK-algorithm
- Allouche, J.-P., 254
- Almkvist, G., 105, 250
- Alperin, J. L., 524
- Alter, R., 214
- alternating graph, *see* graph, alternating
- alternating permutation, *see* permutation, alternating
- alternating tree, *see* tree, alternating
- Anand, H., 68
- Ando, T., 545
- André, D., 212, 265
- Andrews, G. E., 68, 263, 272, 403, 405, 551
- animal, directed, 276

- arcs
 - noncrossing, 222
 - nonintersecting, 222
- arm length, 457
- arrangement, hyperplane, *see* hyperplane arrangement
- array, two-line, 318
- aspect of a plane partition, *see* plane partition, aspect of
- associahedron, 271
- Athanasiadis, C. A., 117, 135, 142, 143, 263, 265
- Atkin, A. O. L., 402, 406
- augmented Schur function, *see* Schur function, augmented
- Austin, T. L., 126
- automaton, 201
- Aztec diamond, 277
 - augmented, 277
- Babson, E., 504, 542
- Baik, J., 555
- balanced tableau, *see* tableau, balanced
- ballot sequence, *see* sequence, ballot
- Bar-Hillel, Y., 284
- base b expansion, *see* expansion, base b
- bases, dual, 306
- basic sequence, *see* sequence, basic
- basis
 - integral orthonormal, of Λ , 322
 - orthogonal, 307
 - orthonormal, 354
- Baxter permutation, *see* permutation, Baxter
- bead configuration, *see* configuration, bead
- Becker, H. W., 261, 278
- Beckwith, D., 272
- Beem, E. A., 406
- Beissinger, J. S., 106, 107, 140
- Belcher, P., 217
- Bell number, *see* number, Bell
- Bender, E. A., 65, 68, 112, 403, 406, 493
- Benyon, W. M., 515
- Berele, A., 406
- Berenshtein, *see* Berenstein
- Berenstein, A. D., 436, 438, 493, 545
- Bergeron, F., 69, 214, 279
- Berlekamp, E., 267
- Bernhart, F., 257
- Bernoulli number, *see* number, Bernoulli
- Berstel, J., 214, 284
- Bertram, E. A., 110
- Bertrand, J., 212, 214
- Bessel function, *see* function, Bessel
- Bessenrodt, C., 538, 554
- BEST theorem, *see* theorem, BEST
- beta function, *see* function, beta
- Bethe lattice, *see* lattice, Bethe
- Bétréma, J., 264
- bialgebra, 342
- bialternant, 335, 397
- Biedenharn, L. C., 406
- Biggs, N., 69
- Billey, S. C., 259–261, 263, 267, 551
- Binet, J. P. M., 212, 214, 215
- Binet–Cauchy formula, *see* formula, Binet–Cauchy
- binomial poset, *see* poset, binomial
- binomial type, 87
- Björner, A., 107, 137, 141, 270, 284, 504, 542
- Blackwell, D. H., 555
- block, 79
- block-tree decomposition, *see* decomposition, block-tree
- block-tree theorem, *see* theorem, block-tree
- Bloom, D. M., 266
- Blum, J., 110
- Blum, P., 281
- board, 489
- Bochner, S., 254
- Bolker, E. D., 110
- Bollobás, B., 555
- Bóna, M., 261, 275, 276
- Bonin, J., 274
- Borchardt, C. W., 66–69, 506
- border strip, *see* strip, border
- border strip decomposition, *see* decomposition, border strip
- border strip tableau, *see* tableau, border strip
- Bouc, S., 504
- Boulanger, A. H. L., 250
- Bousquet-Mélou, M., 275, 276
- box, 372
- bracketing
 - arbitrary, 177
 - binary, 177
 - of a set, 177
 - arbitrary, 178
 - binary, 178
 - of a word, 169, 177
 - arbitrary, 178, 239
 - binary, 177
- branching, complete, 313
- Bratley, P., 406
- Brenti, F., 509, 545
- Bressoud, D. M., 552
- Brink, B., 283
- Bromwich, T. J. I'A., 67, 69, 144–146, 148
- Brown, W. G., 215
- Bruckman, P. S., 279
- Bruhat order, *see* order, Bruhat
- de Bruijn graph, *see* graph, de Bruijn
- de Bruijn sequence, *see* sequence, de Bruijn
- de Bruijn, N. G., 68, 69, 404, 406
- Bryan, J., 113

- Brylawski, T., 490
 Brylinski, R. K., 539
 Burge, W. H., 400, 406, 503, 504
 Burnside's lemma, *see* lemma, Burnside's
 Burnside, W., 404, 406
 BZ-pattern, *see* pattern, BZ-
- Cadogan, C. C., 543
 Calderbank, A. R., 130, 543
 Cameron, P. J., 133
 Canfield, E. R., 132
 Capalbo, M., 158
 Carlitz, L., 68, 105, 108, 114, 122, 133, 155,
 253, 267, 280, 403, 406, 513
 Carlsen, I., 277
 Carmony, L., 216
 Catalan disease, *see* disease, Catalan
 Catalan mania, *see* mania, Catalan
 Catalan number, *see* number, Catalan
 Carrell, J. B., 399, 406
 Catalan, E. C., 212, 215
 Catalonia, 256
 Cauchy identity, *see* identity, Cauchy
 Cauchy, A. L., 397, 404, 406
 Cauchy–Frobenius lemma, *see* lemma,
 Cauchy–Frobenius
 Cauchy–Schwarz inequality, *see* inequality,
 Cauchy–Schwarz
 Cayley graph, *see* graph, Cayley
 Cayley, A., 66–69, 212, 215, 272
 Čebotarev, N. G., 505
 cell, Schubert, 276
 central Delannoy number, *see* number,
 Delannoy, central
 central factorial number, *see* number, central
 factorial
 ch, 351
 chain, saturated, in Young's lattice, 312
 chains, product of, 464
 Chan, C., 115, 267
 Chandon, J. L., 269
 char, 442
 character
 of a finite abelian group, 101
 skew, 469
 virtual, 353
 character of a representation of $GL(n, \mathbb{C})$,
see representation, of $GL(n, \mathbb{C})$,
 character of
 character table, *see* table, character
 characteristic map, *see* map, characteristic
 characteristic polynomial, *see* polynomial,
 characteristic
 Chaundy, T. W., 403, 406
 Chen, W. Y. C., 137, 406, 522
 Chen, Y. M., 519
 chess problem, 230, 453
 chessboard complex, *see* complex, chessboard
- Chevalley, C., 215, 251
 Chomsky, N., 214, 215
 chords, nonintersecting, 222, 238
 Chow, T., 157, 511, 514
 Chowla, S., 66, 69
 chromatic polynomial, *see* polynomial,
 chromatic
 chromatic symmetric function, *see* symmetric
 function, chromatic
 Chrystal, G., 215
 Chung, F. R. K., 69, 274, 277, 278
 Chung, K. L., 265
 Chung–Feller theorem, *see* theorem,
 Chung–Feller
 Cigler, C., 68
 Ciucu, M., 157, 275, 277
 Clark, M. L., 404
 class function, *see* function, class
 clawfree graph, *see* graph, clawfree
 cloud, 80
 co, 356, 361
 coalgebra, 342
 code
 of a partition, *see* partition, code of
 of a permutation, *see* permutation, code of
 Prüfer, 25
 coefficient
 Littlewood–Richardson, 338, 398, 429, 446,
 510
 algebraic interpretations of, 432
 equal to one, 451
 nonnegativity of, 355
 symmetry of, 437
 middle trinomial, 275
 q -binomial, unimodality of, 475
 Cofman, J., 215
 Cohn, H., 117, 277, 403, 406
 Cohn, P. M., 211, 215, 251
 coins, ways to stack, 228
 coloring, 511
 proper, 462
 σ -compatible, 512
 column-strict plane partition, *see* plane partition,
 column-strict
 column-sum vector, *see* vector, column-sum
 comajor index, *see* index, comajor
 combinatorial trigonometry, *see* trigonometry,
 combinatorial
 Comét, S., 517
 commutator, 471
 Comp, 357
 compatible, reverse π -, 358
 complete branching, *see* branching,
 complete
 complete homogeneous symmetric function, *see*
 symmetric function, complete
 homogeneous
 complete matching, *see* matching, complete

- complete symmetric function, *see* symmetric function, complete
- completion
 - MacNeille, 485
 - of a monoid algebra, 196
 - of the ring Λ , 291
- complex
 - chessboard, 504
 - matching, 503
- complexity, 60
 - of certain planar graphs, 103
 - of K_{rs} , 82, 101
- component
 - irreducible, 51
 - of $A \in \mathcal{M}(n, r)$, 51
- component of proper algebraic system, *see* system, proper algebraic, component of
- composition
 - fractional, 98
 - weak, of (m, n) , 184
- composition theorem, 129
- compositional formula, 3
 - for exponential structures, 47
 - permutation version, 6
- compositional inverse, *see* inverse, compositional
- Comtet, L., 66, 213, 215
- configuration counting series, *see* series, configuration counting
- configuration, bead, 517
- conjugacy class
 - even, 301
 - self-inverse, 111
- conjugate
 - of a word, 32
 - of an algebraic series, 162, 247, 255
- conjugate partition, *see* partition, conjugate
- connected graph, *see* graph, connected
- content, 373
- context-free language, *see* language, context-free
- continued fraction, 236
- convergence, of a sequence of formal series, 196
- convex position, probability of, 233
- convex sequence, *see* sequence, convex
- convexotope, 232
- Conway, J. H., 215, 265
- core, p -, *see* p -core
- Cori, R., 261, 278
- correspondence
 - Hillman–Grassl, 380, 401
 - Robinson–Schensted, *see* RSK-algorithm
- costripp, 314
- Coxeter group, *see* group, Coxeter
- Coxeter relations, 113
- Coxeter, H. S. M., 215, 265
- Crapo, H., 142
- Curtis, C. W., 406, 536
- Cusick, T. W., 278
- Cvetković, D. M., 69, 157
- cycle index, 19
 - augmented, 19
 - of symmetric semigroup, 83
- cycle index polynomial, *see* polynomial, cycle index
- cycle indicator, *see* indicator, cycle
- Cycle Lemma, *see* lemma, cycle
- cycle monomial, 19
- cycle type of a permutation, *see* permutation, cycle type of
- cycle, n -, *see* n -cycle
- cyclic binomial sum, 253
- Davenport–Schinzel sequence, *see* sequence, Davenport–Schinzel
- Davis, M. W., 283
- Dean, R. A., 263
- decidability, 214
- decomposition
 - block-tree, 120
 - border strip, 470
 - reduced, 454
 - symmetric chain, 456
- Décoste, H., 531
- decreasing subsequence, *see* permutation, subsequence of, decreasing
- degree
 - of η over $K(x)$, 160
 - of a vertex of a plane forest, 30
 - of a vertex of a planted forest, 29
 - of a vertex of a simple graph, 77
 - of an algebraic series, 159
 - x -, 164
- degree sequence, ordered
 - of a planted forest, 29
 - of a simple graph, 77
- Deift, P., 555
- Delannoy number, *see* number, Delannoy
- Delest, M.-P., 258
- Deligne, P., 254
- delta operator, *see* operator, delta
- Denef, J., 254
- Dénes, J., 138
- denominator sequence, of an exponential structure, 45
- Deodhar, V., 276
- depth first order, *see* order, depth first
- depth, of a square $u \in \lambda$, 515
- deque-sortable permutation, *see* permutation, deque-sortable
- derangement, 469, 470, 489
- derivation, 460
- Dershowitz, N., 70, 130, 262
- Désarménien, J., 521
- descent, 236, 351
 - of an SYT, 361, 364, 488
- descent algebra, *see* algebra, descent

- descent set, 351, 382, 404, 454
 - of an SYT, 361
- determinant
 - Jacobian, 207
 - Vandermonde, 334, 374, 397
 - Wronskian, 281
- Deutsch, E., 257, 264
- Dey, I., 111
- D*-finite series, *see* series, *D*-finite
- Diaconis, P., 69, 555
- diagonal
 - in characteristic p , 218
 - noncommutative, 210, 214
 - of a noncommutative rational series, 211
 - of a rational function, 179, 213, 247
 - of a series, 179, 219
- diagram
 - Ferrers, shifted, 366
 - growth, 328, 422, 426, 438, 500, 502
 - Murasaki, 226
 - Puttenham, 262
 - Young, 226, 309
 - paths inside, 231
- diagram of a plane partition, *see* plane partition, diagram of
- Dickins, A., 266
- Dicks, W., 250
- differentiably finite series, *see* series, *D*-finite
- differential poset, *see* poset, differential
- digraph
 - balanced, 54
 - connected, 54
 - Eulerian, 54
- dihedral group, *see* group, dihedral
- dimer, 240, 244
- direct sum decomposition, 45
- discriminant, 161, 165, 211, 218, 219
- disease, Catalan, 256
- dissection
 - of a convex polygon, 169, 234, 239, 453
 - enumeration of every, 176
- Dold, A., 105
- Dollhopf, J., 513
- dominance order, *see* order, dominance
- dominant permutation, *see* permutation, dominant
- domino, 240, 244
- Donaghey, R., 273
- Donnelly, R. G., 263
- Doob, M., 69, 157
- Doran, W. F., 511, 515
- Doty, S., 406
- Doubilet, P., 65, 491
- double rooted tree, *see* tree, double rooted
- doubly-stochastic matrix, *see* matrix, doubly-stochastic
- Dress, A. W. M., 66, 70, 112
- dual bases, *see* bases, dual
- dual Cauchy identity, *see* identity, Cauchy, dual
- dual Knuth-equivalent, *see* equivalent, dual Knuth
- dual RSK algorithm, *see* RSK algorithm, dual
- Duchamp, G., 406
- Dulucq, S., 138, 258, 275, 278, 500
- Dumir, V. C., 68
- Dumont, D., 106, 109
- Duncan, D. G., 519
- Dvir, Y., 538
- Dvoretzky, A., 67, 70
- Dwork, B., 105, 282
- Dyck language, *see* language, Dyck
- Dyck path, *see* path, Dyck
- Dyck word, *see* word, Dyck
- Dynkin, E. B., 534
- ε_λ , 299
- Edelman, A., 277
- Edelman, P. H., 130, 262, 270, 276, 497, 498
- Edrei, A., 545
- Eggleton, R. B., 267
- Ehrenborg, R., 514
- Ehresmann, C., 399, 407, 552
- Ehrhart polynomial, *see* polynomial, Ehrhart
- Ehrhart quasi-polynomial, *see* quasi-polynomial, Ehrhart
- Eichler, M., 215
- Eidswick, J. A., 139
- eigenvalue
 - of Laplacian matrix, 59
 - real, 244
- Eisenstein's theorem, *see* theorem, Eisenstein's
- Eisenstein, G., 213, 215
- elementary sequence of characters, 470, 495
- elementary symmetric function, *see* symmetric function, elementary
- Elkies, N., 277
- equation
 - algebraic differential, 248
 - Korteweg-de Vries, 506
 - Painlevé II, 556
- equidistribution, of maj and inv, 141
- equivalence, Knuth, *see* equivalent, Knuth
- equivalent
 - dual Knuth, 415
 - jeu de taquin, 420
 - Knuth, 400, 414, 437
- Erdélyi, A., 67, 70, 212
- Erdős, P., 111, 404, 407
- Erdős, Peter L., 70, 137
- Eriksson, H., 283
- Eriksson, K., 517
- Errera, A., 258
- Etherington, I. M. H., 67, 70, 212, 278
- Euler number, *see* number, Euler
- Euler, L., 212, 215, 275, 491

- Eulerian polynomial, *see* polynomial, Eulerian
 Eulerian tour, *see* tour, Eulerian
 evac, 425
 evacuation tableau, *see* tableau, evacuation
 ex, 304
 exceedance of a path, *see* path, exceedance of
 expansion, base b , 248
 exponential formula, 5
 for exponential structures, 48
 for 2-partitions, 151
 permutation version, 7
 q -analogue, 66
 exponential generating functions, product of, 1
 exponential polynomial, *see* polynomial,
 exponential
 exponential specialization, *see* specialization,
 exponential
 exponential structure, *see* structure,
 exponential
 ex_q , 305
 extension, linear, *see* linear extension
- Faà di Bruno, F., 65, 70
 Fabel, K., 275
 1-factor, 449
 factorizations, equivalent, 93
 Farahat, H. K., 517
 Favreau, L., 279
 Feit, W., 401, 407
 Feller, W., 265
 Ferrers diagram, *see* diagram, Ferrers
 Fibonacci number, *see* number, Fibonacci
 Fiedler, M., 126
 field, generalized Puiseux, 251
 filling, Littlewood–Richardson, 432
 finite operator calculus, 132
 Fishburn, P. C., 263
 Fix, 350, 394
 flag f -vector, 514
 flag h -vector, 464
 flag Schur function, *see* Schur function, flag
 flag variety, *see* variety, flag
 flag, α -, 351
 flexagon, 256
 Fliess, M., 213, 215
 Flye Sainte-Marie, C., 69, 70
 Foata, D., 65, 70, 118, 119, 127, 140
 Fomin, S. V., 261, 282, 400, 407, 497–499, 502,
 517, 545
 Ford, G. W., 120
 forest
 free, 24
 labeled, 459
 of rooted trees, 23
 planted, 23, 24
 recursively labeled, 92
 rooted, 23
 unlabeled plane, 30
- forgotten symmetric function, *see* symmetric
 function, forgotten
 formal series, *see* series, formal
 Formanek, E., 250
 formula
 Binet–Cauchy, 68, 397
 Faà di Bruno's, 65
 for $\chi^\lambda(\alpha)$, 347
 hook-length, 279, 376, 382, 400
 q -analogue, 376
 hook-content, 403
 Hopf trace, 504
 Lagrange inversion, *see* Lagrange inversion
 formula
 Mehler's, 119
 Weyl character, 403, 444
 Weyl denominator, 444, 503
 Weyl dimension, 444
 Forsyth, A. R., 402
 Fortet, R., 152
 Foster, R. M., 133
 Foulkes, H. O., 404, 407, 520, 541
 Fourier transform, *see* transform,
 Fourier
 fractional composition, *see* composition,
 fractional
 fractional series, *see* series, fractional
 Frame, J. S., 105, 400, 407
 Françon, J., 109, 127, 140
 Frenel, J., 278
 Franz, R., 112
 Franzblau, D. S., 401, 407
 Frederickson, H., 158
 free group, *see* group, free
 free monoid, *see* monoid, free
 Freund, J. E., 263
 frieze pattern, *see* pattern, frieze
 Frobenius characteristic map, *see* map,
 characteristic
 Frobenius image, *see* image, Frobenius
 Frobenius notation, *see* notation,
 Frobenius
 Frobenius reciprocity, *see* reciprocity,
 Frobenius
 Frobenius, F. G., 65, 70, 400, 404, 407, 527, 530
 Frumkin, A., 531
 Fuchs, A., 127
 Fulman, J., 113
 Fulton, W., 399, 407
 function
 acyclic, 126
 Airy, 556
 Bessel, 101
 beta, 523
 class, 349
 Euler totient, 479, 489
 group reduction, 404
 idempotent, 84

- Möbius, 268, 289, 463, 480
 of Π_n , 7
 of Q_n , 49
 multiplicative
 on NC, 86
 on Π , 7
 on Ψ , 85
 polynomially recursive, *see* function,
 P-recursive
 P-recursive, 188, 213
 quasisymmetric, *see* quasisymmetric
 function
 Riemann zeta, 113, 485
 Schur, *see* Schur function
 symmetric, *see* symmetric function
 zeta, of an algebraic variety, 105
 fundamental quasisymmetric function, *see*
 quasisymmetric function, fundamental
 Furlinger, J., 272
 Furstenburg, H., 213, 215, 254
 von Fuss, N., 212, 215

 Gale, D., 496
 Galois group, *see* group, Galois
 Gandhi, J. M., 108
 Gansner, E. R., 548, 550
 Gantmacher, F. R., 545
 gap
 Hadamard, 282
 Gardner, M., 215, 262
 Garsia, A. M., 68, 119, 267, 407, 438, 502, 515,
 518, 519, 548
 Garst, P. F., 504
 Gasharov, V. N., 512, 514
 Gauss, C. F., 518
 Gaussian elimination, noncommutative, 199
 Gelfand pattern, *see* pattern, Gelfand
 Gelfand, I. M., 134, 215, 258, 270, 398, 407
 Gelfand–Tsetlin pattern, *see* pattern,
 Gelfand–Tsetlin
 general linear group, *see* group, general linear
 generalized permutation, *see* permutation,
 generalized
 generating function, *see* series
 generating tree, *see* tree, generating
Genji, The Tale of, 262
 Genocchi number, *see* number, Genocchi
 germ
 at ∞ , 194
 P-recursive, 194
 Gessel, I. M., 66–68, 70, 105, 106, 121, 123,
 124, 140, 141, 148, 149, 213, 215, 256,
 261, 264, 265, 279, 281, 397, 401, 404,
 407, 490, 493, 499, 520, 521, 543, 548,
 551, 557
 Getu, S., 274
 Getzler, E., 541
 gfun, 279

 Giacometti, A., 285
 Giambelli, G. Z., 399, 407, 508
 Gili, J., 266
 Girard, A., 396, 407
 Gire, S., 274, 275
 Gleason, A. M., 110
 Goldberg, L. R., 267
 Goldman, J., 65, 68
 Golomb, S. W., 70
 Good, I. J., 68, 70
 Goodall, S., 276
 Goodman, F. M., 260, 267
 Gordon, B., 110, 403, 407, 493
 Gould, H. W., 127, 215, 262
 Goulden, I. P., 138, 139, 275, 494, 506,
 513, 523
 Goupil, A., 522
 Gouyou-Beauchamps, D., 274, 276, 493
 Grabiner, D., 285
 Graev, M. I., 134, 258, 270
 Graham, R. L., 69, 274, 277, 278
 graph
 alternating, 91
 bipartite, 73
 complete, 73, 101
 de Bruijn, 63, 103
 Cayley, 68
 clawfree, 464
 connected, 10, 94
 incomparability, 463
 intersection, 138
 noncrossing, 240
 regular, 102
 threshold, 72
 triangle-free, 464
 graphs, nonisomorphic, 393, 489
 Grassl, R. M., 404, 408
 Greene's theorem, *see* theorem, Greene's
 Greene, C., 401, 404, 407, 437, 490, 497, 498,
 513, 515
 Griesing, D., 277
 Grieser, D., 150
 Grimson, R. C., 66, 70
 group
 Coxeter, 248, 265
 dihedral, 389, 391
 finite abelian, 101
 free, 76, 206, 473
 automorphism of, 529
 Galois, 281
 general linear, 440
 IC-, 473
 Kranz, 405
 quaternion, 528
 rank of, 476
 special linear, 445
 symmetric
 infinite, 545

- group (*Cont.*)
 - irreducible characters of, 354
 - symplectic, 231, 259, 550
 - Weyl, 541
- group reduction function, *see* function, group reduction
- growth diagram, *see* diagram, growth
- Guibert, O., 261, 278
- Gupta, H., 66, 68, 70
- Gustafson, R. A., 490
- Gutman, I., 157
- Guy, R. K., 264, 267

- Habsieger, L., 213, 215
- Hadamard matrix, *see* matrix, Hadamard
- Hadamard product, *see* product, Hadamard
- Haible, B., 215, 216
- Haiman, M., 137, 140, 214, 216, 267, 271, 276, 285, 407, 408, 502, 545
- half edge, 238
- Hall, J. I., 408
- Hall, Jr., M., 112, 259
- Hall, P., 399, 408
- Hamidoune, Y. O., 514
- Hammersley, J. M., 260, 554, 555
- Han, G.-N., 515
- Hanlon, P. J., 130, 507, 530, 539, 542, 543
- Harary, F., 408
- Hardy, G. H., 491
- harmonic series, *see* series, harmonic
- de la Harpe, P., 260, 267
- Harris, B., 129
- Harris, J., 407
- Harris, Jr., W. A., 281
- Hartshorne, R., 105
- Hautus, M. L. J., 216
- Hawkins, T., 408
- Headley, P., 142, 143, 283
- heartamard product, *see* product, heartamard
- height of a border strip, *see* strip, border, height of
- height of a border strip tableau, *see* tableau, border strip, height of
- Henrici, P., 67, 70
- Hermite polynomial, *see* polynomial, Hermite
- Hersh, P., 283
- Herstein, I. N., 66, 69
- Hilbert, D., 252
- Hilliker, D. L., 216
- Hillman, A. P., 403, 408
- Hillman–Grassl correspondence, *see* correspondence, Hillman–Grassl
- Hilton, P. J., 216
- Hipparchus, 213
- Hirzebruch, F., 146
- Hodge, W. V. D., 399, 408
- Hofbauer, J., 68, 272

- Hoggatt, Jr., V. E., 274, 278
- holonomic series, *see* series, holonomic
- hook length, 373, 467, 469, 486, 487
 - divisible by p , 467
- hook lengths, product of, 472, 474
- hook-length formula, *see* formula, hook-length
- Hopf algebra, *see* algebra, Hopf
- Hopf trace formula, *see* formula, Hopf trace
- horizontal strip, *see* strip, horizontal
- Horrocks, G., 399, 408
- Hough, D., 213
- Houten, L., 493
- Howlett, R. B., 283
- Huang, M.-F., 251
- Huang, S., 270
- Humphreys, J. E., 113
- Hurwitz, A., 65, 70, 127, 138, 139, 213, 545
- h -vector, 235
- hypergeometric functions on the group of unipotent matrices, 134
- hypergeometric system, 134
- hyperplane arrangement, 96
 - Catalan, 229
 - Linial, 91, 135
 - reduced modulo p , 96
 - Shi, 142
 - threshold, 73

- IC -group, *see* group, IC -
- ideal, of algebra of upper triangular matrices, 231
- idempotent function, *see* function, idempotent
- idempotent, orthogonal, 473, 522
- identity
 - Abel's, 127
 - Cauchy, 322, 397, 474, 533, 537, 543, 556
 - dual, 332, 543
 - Jacobi–Trudi, 342, 354, 397, 399, 401, 510, 520, 551
 - dual, 344, 397, 544
 - for flag Schur functions, 551
 - truncation of, 460
- image, Frobenius, 352
- immanant of a Jacobi–Trudi matrix, *see* matrix, Jacobi–Trudi, immanant of
- incidence algebra, *see* algebra, incidence
- inclusion-exclusion principle, *see* principle, inclusion-exclusion
- incomparability graph, *see* graph, incomparability
- increasing subsequence, *see* permutation, subsequence of, increasing
- indegree, 54
- independent set of vertices, 462
- index
 - comajor, of an SYT, 364
 - major, 236
 - major, of an SYT, 363, 364, 479, 480

- indicator, cycle, 19, 390, 404
 - augmented, 390, 489
 - of symmetric semigroup, 83
- induction product, *see* product, induction
- induction, from H to G , 350
- inequality, Cauchy–Schwarz, 538
- inner plethysm, *see* plethysm, inner
- insertion
 - column, 388
 - row, 316
- insertion path, *see* path, insertion
- insertion tableau, *see* tableau, insertion
- integral, abelian, 211
- integrally equivalent to the identity, 323
- internal product, *see* product, internal
- intersection graph, *see* graph, intersection
- intersection poset, *see* poset, intersection
- intertwining number, *see* number, intertwining
- intransitive tree, *see* tree, intransitive
- invariant
 - of $SL(2, \mathbb{C})$, 231
 - rank-selected Möbius, 464
- inverse
 - compositional, 36, 218
 - plethystic, 479
- inversion
 - Möbius, 268, 511
 - of a tree, *see* tree, inversion of
- inversion poset, *see* poset, inversion
- inversion table, *see* table, inversion
- involution
 - 3412-avoiding, 241
 - fixed-point-free, 225
 - in \mathfrak{S}_n , 305, 330, 502
 - on the ring Λ , 296
 - on the ring \mathbb{Q} , 482
 - Schützenberger, 389, 426, 438
- irreducible polynomial, *see* polynomial, irreducible
- Ireland, K., 105
- Isaacs, I. M., 522, 524, 527, 529, 530, 538, 541
- isometry, 308, 352
- iteration lemma, *see* lemma, iteration
- Jablonski, M. E., 558
- Jackson, D. M., 139, 261, 523
- Jackson, F., 68
- Jacob, G., 214, 215, 283
- Jacobi, K. G. J., 65, 70, 282, 397, 408, 490, 506
- Jacobian determinant, *see* determinant, Jacobian
- Jacobi–Trudi identity, *see* identity, Jacobi–Trudi
- Jacobstahl, E., 66, 70
- Jaffe, J., 283
- Jagers, A. A., 105
- James, G. D., 408, 438, 517
- Jänischen, W., 105
- Janson, S., 555
- jdt, 420, 421
- jeu de taquin, 419, 438, 552
 - symmetry of, 425
- jeu de taquin equivalent, *see* equivalent, jeu de taquin
- jeu de taquin slide, *see* slide, jeu de taquin
- Jia, R. Q., 493
- Jiang, M. S., 273
- Jockusch, W., 259, 260, 263, 267, 551
- Johansson, K., 555
- Johnson, C. R., 152
- Johnson, W. W., 398, 408
- Jones, V. F. R., 260, 267
- Jordan–Hölder set, *see* set, Jordan–Hölder
- Joyal, A., 66, 67
- Joźefiak, T., 504
- Jucis, A.-A. A., 505
- Jungen, R., 211, 216, 250
- Kac, M., 152
- Kadell, K., 554
- Kahaner, D., 132, 133
- Kalikow, L., 142
- Kapranov, M. M., 215, 541
- Karagueuzian, D. B., 504
- Karlin, S., 545
- Karp, R. M., 496
- Katz, M., 122, 123
- Kazarian, M., 213, 215
- Kazhdan–Lusztig theory, *see* theory, Kazhdan–Lusztig
- k -component, of $A \in \mathcal{M}(n, r)$, 51
- Keller, G., 263
- Kellogg, A., 267
- Kemp, R., 499
- Kerber, A., 408, 517, 528, 535
- Kerov, S. V., 438, 515, 523, 545, 555
- Kim, J. H., 555
- king, on a chessboard, 241
- King, R., 258
- Kirchhoff, G., 66
- Kirillov, A. N., 498, 507, 515, 518, 540
- Kirkman, T. P., 272
- Klarner, D. A., 216, 256
- Klazar, M., 262, 273, 274, 276
- Kleiman, M., 274, 278
- Kleiman, S. L., 408
- Kleitman, D. J., 437, 490
- Kleshchev, A. S., 538
- Klyachko, A., 406
- Knödel, W., 133
- Knuth equivalence, *see* equivalent, Knuth
- Knuth-equivalent, *see* equivalent, Knuth
- Knuth transformation, *see* transformation, Knuth
- Knuth, D. E., 67, 70, 149, 157, 259–261, 263, 274, 399, 400, 402, 403, 406, 408, 437, 493
- Knutson, D., 540

- Koblitz, N., 105
 Koker, J., 216
 Konheim, A. G., 140, 141
 Kontsevich, M., 156, 541
 Kostant, B., 545
 Kostka number, *see* number, Kostka
 Kostka polynomial, *see* polynomial, Kostka
 Kostka, C., 397, 398, 408, 409
 Kostka–Foulkes polynomial, *see* polynomial, Kostka–Foulkes
 Kostlan, E., 277
 Kranz group, *see* group, Kranz
 Kranzgruppe, 405
 Kraśkiewicz, W., 498, 541
 Krattenthaler, C., 68, 258, 401, 403, 409, 550
 Kremer, D., 274, 499
 Kreweras, G., 130, 140, 141, 273, 401
 Krob, D., 279, 282, 406, 407, 409
 Kronecker product, *see* product, Kronecker
 Kuchinski, M., 216
 Kuenzi, N. J., 216
 Kuich, W., 216
 Kuperberg, G., 277, 551, 552
 Kuznetsov, A., 273
 Kwak, J. H., 112

 Labelle, G., 67, 69, 70
 Labelle, J., 118
 labeling
 of a poset, 359
 Schur, 360
 lacunary, quadratically, 248
 Lagrange inversion formula, 38, 67
 multivariate, 67
 noncommutative, 68
 q -analogue, 68, 502
 Lagrange, J. L., 67, 71, 147
 Laguerre polynomial, *see* polynomial, Laguerre
 Lakshmibai, V., 276
 Laksov, D., 408
 Lam, T. Y., 493
 λ -ring, *see* ring, λ -
 Lamé, G., 212, 216
 Lando, S., 213, 215
 Lang, S., 216
 language, 204
 algebraic, 204, 249
 context-free, 204
 Dyck, 204, 207, 214, 284
 Łukasiewicz, 205
 nonalgebraic, 249
 rational, 204, 248, 249
 regular, 204
 Laplacian matrix, *see* matrix, Laplacian
 Larsen, M., 255, 277, 403, 406
 Las Vergnas, M., 107

 Lascoux, A., 261, 407, 498, 502, 504, 508, 518, 540, 552
 last exit, 56
 lattice
 Bethe, 285
 distributive, 552
 of subgroups, 464
 semiprimary, 515
 simplicial Eulerian, 234
 Tamari, 234
 vector, 90
 Young's, 263, 288, 468, 499, 502, 554
 chain in, 312
 lattice path, *see* path, lattice
 lattice permutation, *see* permutation, lattice
 Laurent expansion, 98
 Laurent series, *see* series, Laurent
 Leclerc, B., 406, 407, 409, 506, 518
 Lee, C. W., 216, 271, 272
 Lee, J., 112
 van Leeuwen, M. A. A., 399, 409
 Lefschetz, S., 216
 left-to-right minimum, 77
 leg length, 457
 Leibowitz, R., 216
 Leighton, F. T., 265
 Leitz, M., 524
 Lemaire, J., 269
 lemma
 Burnside's, 350, 394, 404, 535
 Cauchy–Frobenius, 404
 cycle, 67
 iteration, 283
 pumping, 283, 284
 Lenart, C., 515
 length of a partition, *see* partition, length of
 length, hook, *see* hook length
 Leroux, P., 69
 Levine, J., 258
 Lewis, J., 142
 Lewis, R. P., 110
 Lie algebra
 on Λ , 460
 symplectic, 550
 Liebler, R. A., 493
 linear extension, 227, 312, 359
 linear transformation, adjoint, 337
 Linial arrangement, *see* arrangement, Linial
 Linial, N., 135
 van Lint, J. H., 71, 264
 Linusson, S., 142, 261, 504, 542
 Lipshitz, L., 216, 254, 281, 282
 Liskovets, V., 112
 Littelmann, P., 510
 Littlewood, D. E., 398, 399, 401, 403, 404, 409, 438, 481,
 Littlewood–Richardson coefficient, *see*
 coefficient, Littlewood–Richardson

- Littlewood–Richardson rule, *see* rule,
 Littlewood–Richardson
 Livingstone, D., 559
 Lloyd, E. K., 409
 local binary search tree, *see* tree, local binary
 search
 local rule, *see* rule, local
 locally rank-symmetric poset, *see* poset, locally
 rank-symmetric
 locally self-dual poset, *see* poset, locally
 self-dual
 Logan, B. F., 555
 Longyear, J. Q., 139
 Lothaire, M., 67
 Louchard, G., 258
 Louck, J. D., 406
 Lovász, L., 504
 Lubotzky, A., 112
 Łukasiewicz language, *see* language,
 Łukasiewicz
 van de Lune, J., 267
 Luo, Jian-Jin, 216
 Lusztig, G., 401, 515
 Lyndon type, *see* type, Lyndon
 Lyndon word, *see* word, Lyndon
 Lyons, R., 255
- Macdonald, I. G., 261, 397, 399, 403, 406, 409,
 410, 438, 493, 498, 540, 551
 Mackey, G., 536
 MacMahon, P. A., 133, 400–403, 410, 550, 558
 MacNeille completion, *see* completion,
 MacNeille
 MacWilliams, J., 156
 Mahadev, N. V. R., 107
 major index, *see* index, major
 majorization order, *see* order, majorization
 Mallows, C. L., 140, 278
 Malvenuto, C., 410, 548
 mania, Catalan, 256
 map
 characteristic, 351, 396
 rational, 231
 Martin, W. T., 254
 matching complex, *see* complex, matching
 matching, complete, 449
 Mathieu, O., 542
 matrix
 (0, 1), 290
 doubly-stochastic
 symmetric, 80
 Hadamard, 152
 inverse Kostka, 342
 irreducible, 51
 Jacobi–Trudi, 466
 immanant of, 513
 Laplacian
 of a directed graph, 57
 of an undirected graph, 60
 of K_{rs} , 101
 of finite support, 318
 permutation, 320, 389
 positive definite, 229
 positive semidefinite, 481
 random, 244, 531
 symmetric, 16
 Toeplitz, 544
 totally positive, 545
 transition, 291
 tridiagonal, 229
 Vandermonde, 280, 506, 544
 matrix-tree theorem, *see* theorem,
 matrix-tree
 McEliece, R. J., 399
 McIntosh, R. J., 278
 McKay, J. K. S., 406, 493
 Mednykh, A. D., 523, 524
 Mehler's formula, *see* formula, Mehler's
 Metropolis, N., 66, 71
 middle trinomial coefficient, *see* coefficient,
 middle trinomial
 Mills, W. H., 552
 Milne, S. C., 490
 Ming, An-tu, 212
 minimally unavoidable subset, *see* subset,
 minimally unavoidable
 Mitchell, O. H., 398, 410
 Möbius band, 242
 Möbius function, *see* function, Möbius
 Möbius inversion, *see* inversion, Möbius
 module, Whitehouse, 542
 Mohanty, S. G., 265, 266
 Molev, A., 410
 monoid
 free, 195
 plactic, 438
 monomial quasisymmetric function, *see*
 quasisymmetric function, monomial
 monomial symmetric function, *see* symmetric
 function, monomial
 monotone triangle, *see* triangle, monotone
 Moon, J. W., 67, 71, 264
 Moore, W. K., 66, 69
 Moreau, M., 558
 Morrison, J., 277
 Morrison, S., 281
 Moser, J., 506
 Moser, M. O. J., 275
 Moszkowski, P., 138, 140, 273
 Motzkin number, *see* number, Motzkin
 Motzkin path, *see* path, Motzkin
 Motzkin, T., 67, 70, 273
 Muir, T., 398, 410
 Müller, T., 66, 70, 112
 Mullin, R. C., 132, 262, 274

- multiplicative function, *see* function, multiplicative
- Murasaki diagram, *see* diagram, Murasaki
- Murnaghan, F. D., 401, 410
- Murnaghan–Nakayama rule, *see* rule, Murnaghan–Nakayama
- von Nägelsbach, H. E., 397, 398, 410
- Nakayama, T., 401, 410, 517
- Nanda, V. S., 402, 410
- Narayana number, *see* number, Narayana
- Narayana, T. V., 265, 266, 273
- natural order, *see* order, natural
- n -cycle, 471, 472, 479, 480, 489
- necklace, 489
 - primitive, 543
- Nerode, A., 283
- Netto, E., 212
- network, series-parallel, 89
- Neumann, P. M., 410
- Neville, E. H., 67, 71
- Newman, M., 152, 265, 505
- Nica, A., 131, 262, 526
- Nichols, W., 266
- Nicol, C. A., 541
- Nijenhuis, A., 118, 401, 407
- nilCoxeter algebra, *see* algebra, nilCoxeter
- nilCoxeter relation, *see* relation, nilCoxeter
- non-associative combination, 67
- noncrossing graph, *see* graph, noncrossing
- noncrossing partition, *see* partition, noncrossing
- noncrossing tree, *see* tree, noncrossing
- nonisomorphic graphs, *see* graphs, nonisomorphic
- non-messing-up theorem, *see* theorem, non-messing-up
- nonnesting partition, *see* partition, nonnesting
- Norton, S. P., 110
- notation, Frobenius, 458, 461
- Novelli, J.-C., 401, 410
- Noy, M., 138
- number
 - Bell, 13
 - Bernoulli, 145
 - Catalan, 36, 172, 173, 177, 205, 207, 212, 230, 232–234, 243, 266, 267, 452, 484
 - 66 combinatorial interpretations, 219
 - algebraic interpretations, 231
 - q -analogue, 235
 - central factorial, 74
 - Delannoy, 185, 213
 - central, 185, 244
 - Euler, 50, 470
 - Fibonacci, 470
 - Genocchi, 74
 - Hipparchus, 213
 - intertwining, 434
 - Kostka, 311, 355, 398, 481
 - table of, 316
 - little Schröder, 178
 - Motzkin, 238, 243, 274
 - Narayana, 237, 270
 - Schröder, 178, 219, 239, 241
 - q -analogue, 274
 - skew Kostka, 311
 - tangent, 50
 - triangular, 467
- Nyquist, H., 152–153
- Oakley, C. O., 256
- Odlyzko, A. M., 132, 133, 264, 277
- O'Hara, K. M., 499, 535
- Ojanguren, M., 251
- Okada, S., 410
- Okazaki, S., 520, 558
- Okounkov, A., 410, 545
- Oktaç, A., 216
- Olshanski, G., 410, 545
- Olsson, J. B., 517
- operation
 - commutative nonassociative binary, 245
 - nonassociative binary, 173
- operator
 - delta, 87
 - shift, 87
 - shift-invariant, 87
- order
 - Bruhat, 243, 485
 - depth first, 33
 - dominance, 288, 450, 451, 466
 - majorization, 288
 - natural, 288
 - reverse lexicographic, 289
- order polynomial, *see* polynomial, order
- ordered partition, *see* partition, ordered
- order-preserving, 359
- orientation, acyclic, 463, 512
- oriented tree, *see* tree, oriented
- Orlik, P., 142
- orthogonality, of $\chi^\lambda(\mu)$, 348
- orthonormal basis, *see* basis, orthonormal
- oscillating tableau, *see* tableau, oscillating
- outdegree, 54
- outdegree sequence, *see* sequence, outdegree
- Painlevé, P., 250
- Pak, I., 142, 143, 273, 401, 410
- Pallo, J. M., 270
- Palmer, E. M., 408
- parallel wall property, 283
- parallelogram polyomino, *see* polyomino, parallelogram
- parenthesization, 169, 220, 245
- parking function, 94
- prime, 95

- partition
 - code of, 517, 554
 - conjugate, 287
 - connected, 463
 - hook of, 467
 - length of, 287
 - maximizing f^λ , 488
 - noncrossing, 86, 137, 226, 239, 240, 465
 - strongly, 273
 - nonnesting, 137, 226
 - for a reflection group, 262
 - of a multiset, 496
 - of a nonnegative integer, 287
 - of a set, 454
 - ordered, 297
 - P -, *see* P -partition
 - (P, ω) -, *see* (P, ω) -partition
 - plane, *see* plane partition
 - rank of, 289
 - r -dimensional, 365, 402
 - self-conjugate, 458
 - stable, 462
 - total, 13, 66, 87
 - total binary, 14, 66
- partitions, chains of, 312
- path
 - Dyck, 173, 221, 263
 - excedance of, 230
 - insertion, 317
 - lattice
 - in the plane, 169, 184, 221, 228, 238, 239, 242
 - in λ , 380
 - in \mathbb{R}^ℓ , 313
 - pair of, 221
 - Motzkin, 238
 - S -, 184
- path model theory, *see* theory, path model
- pattern, 392
 - BZ-, 436
 - frieze, 265
 - Gelfand, 313
 - Gelfand–Tsetlin, 313, 398, 485
- pattern inventory, 392
- Patterson, S. J., 216
- Paule, P., 68
- p -core, 468
 - empty, 468, 469
- Peart, P., 257
- pebble, 244
- Pedersen, J., 216
- Peel, M. H., 438
- Peled, U. N., 106, 107, 140
- Pemantle, R., 255
- Penaud, J.-G., 138, 258, 264
- Pepper, S., 138
- Pergola, E., 274
- Perlstadt, M. A., 278
- permanent, 100
- permutation
 - 132-avoiding, 261
 - 1342-avoiding, 243
 - 213-avoiding, 259
 - 2143-avoiding, 455
 - 231-avoiding, 261
 - 312-avoiding, 224, 259, 261
 - 321-avoiding, 224, 259, 263, 267
 - 4231 and 3412-avoiding, 243
 - alternating, 73, 75, 520
 - Baxter, 225, 246
 - reduced, 246
 - code of, 259
 - cycle type of, 298
 - deque-sortable, 274
 - dominant, 261
 - generalized, 318
 - graphical representation, 27
 - lattice, 313, 400, 432
 - shape of, 387
 - smooth, 243
 - sortable on two parallel queues, 225
 - square root of, 76
 - stack-sortable, 224
 - subsequence of, 386
 - decreasing, 386
 - expected length of longest increasing, 488
 - increasing, 246, 386
 - increasing and decreasing, 404, 488
 - 2-stack sortable, 241
 - typical shape of, 555
 - u -avoiding, 239, 247
 - vexillary, 455
- permutation representation, *see* representation, permutation
- permutations, equivalent, 79
- Petkovsek, M., 216
- Pfaff, J. F., 212
- Pfaffian, 493
- Pieri, M., 398, 410
- Pieri's rule, *see* rule, Pieri's
- Pitman, J., 124
- plactic monoid, *see* monoid, plactic
- planar rhyme scheme, 262
- plane binary tree, *see* tree, binary, plane
- plane partition, 365
 - aspect of, 372, 401
 - asymptotic enumeration, 485
 - column-strict, 227, 314
 - diagram of, 371
 - history of, 401
 - number of columns, 365
 - number of rows, 365
 - part of, 365
 - reverse, 403, 483
 - symmetric, 483
 - weak, 379

- plane partition (*Cont.*)
 self-complementary, 486
 shape of, 365
 skew, 487
 symmetric, 369, 403, 483
 symmetry class of, 403, 551
 totally symmetric, 485
 q -enumeration, 551
 totally symmetric and self-complementary, 485
 trace of, 365, 403, 484
 with at most r rows, 369
 with at most r rows and c columns, 365, 483
- plane S -tree, *see* tree, plane S -
- plethysm, 404, 447, 475, 479, 480, 543
 etymology of, 404
 inner, 533
- plethysmōs*, 404
 $\pi\lambda\eta\theta\upsilon\sigma\mu\omicron\varsigma$, 404
- plethystic inverse, *see* inverse, plethystic
- Plouffe, S., 279
- pole, telephone, 72
- Pollak, H., 140
- Pólya theory, *see* theory, Pólya
- Pólya, G., 65, 71, 213, 216, 250, 253, 258, 404, 411
- polynomial
 Abel, 87
 cycle index, 19
 characteristic
 of ω , 301
 of a hyperplane arrangement, 96
 of Linial arrangement, 91
 of Shi arrangement, 96
 of threshold arrangement, 73
 of Ψ_n , 86
 of Q_n , 49
 chromatic, of K_{mn} , 73
 cycle index, 391
 Ehrhart, 234
 Eulerian, 77, 489
 exponential, 87
 Hermite, 119
 irreducible, 160, 219
 Kostka, 515
 Kostka–Foulkes, 515
 Laguerre, 88, 118
 noncommutative, 196
 order, 378
 q -Catalan, 237
 unimodal, 475
 with real zeros, 463, 481, 514, 545
 zeta
 of a binomial poset, 88
 of Q_n , 49
- polynomially recursive function, *see* function, P -recursive
- polyomino
 enumeration, 258
 parallelogram, 239, 257
- polytope of degree sequences, 107
- (P, ω) -partition, 359, 401
- van der Poorten, A. J., 216, 254
- poset
 $(3 + 1)$ -free, 463
 binomial, 88
 differential, 499
 intersection
 of a hyperplane arrangement, 96
 of the Linial arrangement, 91
 of the Shi arrangement, 96
 of the threshold arrangement, 73
 inversion, 325
 locally rank-symmetric, 464
 locally self-dual, 464
 of direct sum decompositions, 237
 of intervals of a chain, 227
 series-parallel, 88
 shuffle, 465
 simplicial, 124
 triangular, 124
 with no 3-element antichain, 242
- position
 reachable, 244
 unavoidable, 244
- Postnikov, A., 134–136, 138, 139, 143, 258, 259, 262, 265, 268–270, 273
- Pouget, J., 269
- Poupard, Y., 273
- power series, *see* series
- power sum symmetric function, *see* symmetric function, power sum
- power tree, *see* tree, power
- P -partition, 358, 378
 anticipated by MacMahon, 402
 reverse, 358
- p -quotient, 517
- Pragacz, P., 498, 504, 508
- P -recursive function, *see* function, P -recursive
- preorder, 33
- principal specialization, *see* specialization, principal
- principle, of inclusion-exclusion, 543
- problem
 Schröder's
 first, 177, 213
 fourth, 66, 133, 178, 213
 second, 177, 178, 213, 273
 third, 66, 178, 213
 Wedderburn–Etherington commutative bracketing, 278
- Procesi, C., 514, 515, 538
- Proctor, R. A., 403, 411, 534, 550, 551
- Prodinger, H., 262

- product
 - Cauchy, 382
 - Hadamard, 166, 233
 - in characteristic p , 218
 - multivariate, 218
 - of noncommutative series, 207, 214, 248
 - of D -finite series, 193
 - heartamard, 219
 - induction, 352
 - internal, 476, 478
 - basis-free definition of, 477
 - Kronecker, 476
 - tensor, 476
 - wreath, 405, 449
- proper algebraic system, *see* system, proper algebraic
- proper coloring, *see* coloring, proper
- Propp, J. G., 264, 277, 403, 406
- Prouhet, E., 272
- Prüfer, H., 66, 71
- Prüfer code, *see* code, Prüfer
- Prüfer sequence, *see* sequence, Prüfer
- P -tableau, *see* tableau, P -
- Puiseux series, *see* series, Puiseux
- Puiseux's theorem, *see* theorem, Puiseux's
- Puiseux, V., 211, 216
- pumping lemma, *see* lemma, pumping
- Putnam Competition, 278
- Puttenham, G., 262
- Puttenham diagram, *see* diagram, Puttenham
- Puusa, A., 266
- q -binomial coefficient, *see* coefficient, q -binomial
- quasi-polynomial, Ehrhart, 233
- quasisymmetric function, 356, 382, 455, 464, 482, 483
 - fundamental, 357, 384, 431, 463
 - history of, 401
 - monomial, 357
- quasisymmetric functions
 - algebra of, 357
- quotient field
 - of $K[x]$, 160
 - of $K[[x]]$, 160
- Rabinowitz, S., 404, 411
- Radoux, C., 267
- Rains, E., 133, 148
- Ramanujan, S., 272
- Randall, D., 277
- random matrix, *see* matrix, random
- random walk, *see* walk, random
- Randrianarivony, A., 109
- Raney, G. N., 67, 71
- rank
 - of a group, *see* group, rank of
 - of a partition, *see* partition, rank of
 - rational language, *see* language rational
 - r -dimensional partition, *see* partition, r -dimensional
 - reachable position, *see* position, reachable
- Read, R. C., 404, 411
- reading word, *see* word, reading
- reciprocity
 - between sets and multisets, 297
 - Frobenius, 353
 - Stirling number, 149
- reciprocity theorem, *see* theorem, reciprocity
- recognizable series, *see* series, recognizable
- recording tableau, *see* tableau, recording
- recursively labeled tree, *see* tree, recursively labeled
- Redfield, J. H., 404, 411, 537
- reduced decomposition, *see* decomposition, reduced
- reduced word, *see* word, reduced
- reducing the number of variables, 302
- reflection principle, 212, 265
- Regev, A., 493, 538
- regular language, *see* language, regular
- regular representation, *see* representation, regular
- Reiner, I., 536
- Reiner, V., 270, 276, 411, 497, 498, 504
- relation
 - nilCoxeter, 497
 - similarity, 264
- Remmel, J. B., 68, 401, 403, 404, 406, 411, 438, 504, 519, 539
- representation
 - induced, 396
 - linear, 395
 - of $GL(n, \mathbb{C})$
 - adjoint, 443
 - character of, 442
 - defining, 441, 443
 - degree of, 440
 - dimension of, 440
 - homogeneous, 440
 - linear, 440
 - polynomial, 440
 - rational, 404, 440
 - tensor product, 446
 - trivial, 441, 443
- permutation, 395
- of $SL(n, \mathbb{C})$
 - adjoint, 445
 - polynomial, 445
- regular, 478
 - of \mathfrak{S}_n , 356
- tensor product, 352, 476
- Reshetikhin, N. Yu., 515

- residue calculus, 182
- Retakh, V. S., 407
- Reutenauer, C., 214, 216, 261, 283, 284, 410, 411, 511, 521, 543, 548
- reverse lexicographic order, *see* order, reverse lexicographic
- reverse reading work, *see* word, reverse reading
- reverse semistandard tableau, *see* tableau semistandard, reverse
- reverse π -compatible, *see* compatible, reverse π -ribbon, 345
- Rice, J. M., 266
- Rice, S. O., 152, 153
- Richards, D., 260
- Richardson, A. R., 401, 403, 409, 438, 544
- Richman, D., 285
- Rickard, J., 250
- Riddell, R. J., 65, 71
- Riemann zeta function, *see* function, Riemann zeta
- rim hook, 345
- rim hook tableau, *see* tableau, rim hook
- ring, λ -, 533, 540
- Riordan, J., 67, 71, 108, 133, 140, 152, 153, 258
- de Rivière, A., 69, 71
- Robbins, D. P., 551, 552
- Roberts, J., 504
- Robinson, C. A., 542
- Robinson, G. de B., 399, 400, 407, 411, 438, 517
- Robinson, R. W., 130, 408, 543
- Robinson, Robin, 122
- Robinson-Schensted correspondence, *see* RSK-algorithm
- Roby, T. W., 400, 411, 499, 500
- Rodrigues, O., 212, 216, 217
- Rogers, D. G., 213, 217, 258, 260, 264, 274, 275
- Roichman, Y., 531
- Roman, S., 132
- root, of a structure, 10
- Roselle, D. P., 262, 267
- Rosen, J., 68, 71
- Rosen, M., 105
- Rota, G.-C., 65, 66, 71, 132, 133, 142
- Routh, E. J., 545
- row insertion, *see* insertion, row
- row-sum vector, *see* vector, row-sum
- r -partition, 46
- RSK algorithm, 260, 316, 318, 382, 458, 488, 503, 504
 - dual, 331, 400
 - for $(3 + 1)$ -free posets, 512
 - geometric description, 327, 400
 - history of, 399
 - reverse, 549
- Rubel, L. A., 217, 282
- rule
 - Littlewood-Richardson, 339, 399, 506, 552
 - history of, 438
 - jeu de taquin version, 429
 - original version, 432
- local, 328, 424
- Murnaghan-Nakayama, 347, 354, 515, 516, 519, 520, 522
 - history of, 401
- Pieri's, 339, 398, 493, 519, 532
 - dual, 340
 - skew, 340
- Young's, 355
- Rumsey, Jr., H., 552
- Ryan, K. M., 276
- Sachs, H., 69, 277
- Sagan, B. E., 401, 411, 500, 502
- Saks, M. E., 534
- Salmon, G., 252
- Salomaa, A., 216, 217
- Sandhya, B., 276
- Sattler, U., 214
- saturated chain, *see* chain, saturated
- scalar product, on Λ , 306
- Scharf, T., 511, 527, 531, 533, 534, 543
- scheme, Hilbert, 502
- Schensted correspondence, *see* RSK algorithm
- Schensted, C. E., 399, 404, 411, 437
- Schlosser, M., 258
- Schmidt, F. W., 260
- Schmitt, W. R., 276
- Schneider, T., 250
- Schoenberg, I. J., 544
- Schoenfeld, L., 129
- Schröder, E., 66, 71, 213
- Schröder number, *see* number, Schröder
- Schröder's problems, *see* problem, Schröder's
- Schubert cell, *see* cell, Schubert
- Schubert calculus, 398
- Schubert, H., 398
- Schur function, 266, 310
 - augmented, 473
 - earliest reference to, 397
 - factorial, 405
 - flag, 405, 551
 - generalizations of, 405
 - $GL(n, \mathbb{F}_q)$ -invariant, 405
 - modular, 405
 - multi-, 405
 - noncommutative (of Fomin-Greene), 405
 - noncommutative (of Gelfand *et al.*), 405
 - of the series F , 481
 - orthogonal, 405
 - P and Q , 405
 - shifted (corresponding to "shifted" variables), 405
 - shifted (corresponding to shifted shapes), 405
 - skew, 310

- super-, 405
- symplectic, 405
- Schur labeling, *see* labeling, Schur
- Schur positive, *see* symmetric function, *s*-positive
- Schur, I., 66, 71, 105, 121, 147, 400, 404, 411, 491, 527
- Schützenberger involution, *see* involution, Schützenberger
- Schützenberger, M. P., 65, 67, 70, 71, 119, 214, 215, 217, 254, 261, 283, 399, 400, 404, 411, 425, 438, 498, 502, 552
- Schwarz, H. A., 250
- Schwenk, A. J., 285
- Scoins, H. I., 126
- Scott, W. R., 66, 69
- Scoville, R. A., 114, 267, 513
- secondary structure, *see* structure, secondary
- Sedláček, J., 126
- de Segner, A., 212, 217
- Seidenberg, A., 404, 411
- semigroup, symmetric, 83
- semiorder, 233, 263
- semiring, 195, 283
- semistandard tableau, *see* tableau, semistandard
- Seppäläinen, T., 555
- sequence
 - ballot, 173, 212, 238, 312, 313, 400, 432
 - basic, 87
 - binary, 62
 - de Bruijn, 69
 - binary, 62, 103
 - d*-ary, 102
 - convex, 232
 - Davenport–Schinzel, 274
 - outdegree, 505
 - Prüfer, 25, 67
 - unimodal, 237, 489
- series
 - algebraic, 159, 249
 - closure properties, 284
 - noncommutative, 204
 - configuration counting, 392
 - D*-finite, 187, 213
 - composition of, 192
 - multivariate, 213
 - double Eulerian, 385
 - formal, 195
 - fractional
 - Laurent, 161
 - power, 161
 - Gaussian hypergeometric, 250
 - harmonic, 472
 - holonomic, 213
 - Laurent, 38, 160
 - nonalgebraic, 217
 - noncommutative, 195
 - nonrational, noncommutative, 248
 - not *D*-finite, 247
 - Puiseux, 161
 - rational, noncommutative, 196, 248
 - recognizable, 197
 - graph-theoretic interpretation, 200
 - support of, 204, 284
- series-parallel network, *see* network, series-parallel
- series-parallel poset, *see* poset, series-parallel
- serieshelpmate, 230, 453
- Serre, J.-P., 411
- Seshadri, C. S., 276
- set
 - descent, *see* descent set
 - Jordan–Hölder, 359, 383, 483
- Shamir, E., 217
- Shannon, C. E., 133
- shape
 - connected, 345
 - skew, 309
 - translate of, 453
 - staircase, 348, 484, 498, 518
- shape of a permutation, *see* permutation, shape of
- shape of a semistandard tableau, *see* tableau, semistandard, shape of
- Shapiro, L. W., 117, 256, 258, 264–266, 273–275
- Shapiro, M. D., 283
- Shareshian, J., 504, 542
- Sharif, H., 250, 252, 254
- Shepp, L. A., 552, 555
- Shi, J.-Y., 142, 267
- shift operator, *see* operator, shift
- shift-invariant operator, *see* operator, shift-invariant
- Shimozono, M., 411, 497, 498
- Shub, M., 277
- shuffle, 482
 - α -, 351
- shuffle poset, *see* poset, shuffle
- Sibuya, Y., 281
- sign homomorphism, 299
- sign type, \oplus , 231
- Sillke, T., 112
- similarity relation, *see* relation, similarity
- Simion, R., 138, 260, 262, 274, 514
- simplicial poset, *see* poset, simplicial
- Singer, D., 68, 71
- Singer, M. F., 250, 281, 282
- sink, 463
- Skandera, M., 513
- skew Kostka number, *see* number, skew Kostka
- skew Schur function, *see* Schur function, skew
- skew semistandard tableau, *see* tableau, semistandard, skew
- skew shape, *see* shape, skew

- Sleator, D. D., 217
 slide, jeu de taquin, 420
 Smith, C. A. B., 68, 71
 smooth permutation, *see* permutation, smooth
 Snapper, E., 493
 Soittola, M., 217
 Solomon, L., 113, 516, 524, 529, 530, 548
S-path, *see* path, *S*-
 Specht, W., 405, 412
 special linear group, *see* group, special linear
 specialization, 461, 540
 exponential, 304, 344, 502
 q -analogue, 305
 principal, 302, 540
 of the ring Λ , 301
 stable principal, 302, 363, 375, 540
 species, 66
 Speicher, R., 131, 262
 Sperber, S., 281
 Springer, C. M., 138
 SSYT, 309
 st, 433
 stabilizer, 394
 stable partition, *see* partition, stable
 stable set of vertices, 462
 stack-sortable permutation, *see* permutation,
 stack-sortable
 staircase shape, *see* shape, staircase
 Stam, A. J., 127
 standard Young tableau, *see* tableau, standard
 Young
 standardization, 322, 433
 Stankova, Z., 276
 Stanley, R., 65, 68, 69, 71, 111, 115, 116, 118,
 133–136, 140, 142, 143, 149, 156, 157,
 217, 259–263, 265, 267, 269, 270, 272,
 276, 399, 401, 403, 404, 412, 494,
 497–499, 501, 502, 505, 507, 510, 511,
 513–515, 518, 519, 522, 526, 530, 534,
 535, 539–544, 549–553, 557, 559
 Stanton, D. W., 68, 71, 412, 498, 517, 518, 523
 Stanton, R. G., 262, 274
 von Staudt, C. K. Chr., 66
 Steele, J. M., 555
 Stein, P. R., 109, 276
 Steinberg, R., 262
 Stembridge, J. R., 261, 505, 507, 513, 514, 526,
 530, 539, 545, 551, 557
 Stephens, A. B., 274, 275
 Stirling number reciprocity, *see* reciprocity,
 Stirling number
 Stoll, M., 216, 278
 store enumerator, 392
 Stoyanovskii, A. V., 401, 410
 straight-shape tableau, *see* tableau,
 straight-shape
 Strehl, V., 118, 127, 139, 253, 264
 strip
 border, 345, 383, 461, 467, 469, 478, 482,
 516, 525, 554
 height of, 345
 staircase, 470
 horizontal, 339
 vertical, 340
 structure
 exponential, 45, 68, 88
 secondary, 241
 irreducible, 275
 Sturm, J. C. F., 545
 Sturmfels, B., 107
 Sturtevant, D. G., 534
 subgroup, Young, 350, 476
 subsequence, *see* permutation, subsequence of
 subset, minimally unavoidable, 244
 substitution, 302
 successive approximation, 203
 suites majeures, 141
 Sulanke, R. A., 256, 258, 273, 274
 Sundaram, S., 130, 259, 412, 500, 504, 515, 516,
 542
 Sundquist, T. S., 505, 512
 support of a series, *see* series, support of
 Suzuki, M., 112
 switching equivalent, 90
 Sylvester, G. S., 68, 72
 Sylvester, J. J., 66, 68, 72, 535
 symmetric chain decomposition, *see*
 decomposition, symmetric chain
 symmetric function
 augmented monomial, 462
 chromatic, 462
 of a cycle, 464
 of a path, 463
 complete, 294
 complete homogeneous, 294
 elementary, 290, 450
 e -positive, 463, 464, 481
 forgotten, 451
 Hall–Littlewood, 405
 homogeneous, 286
 h -positive, 482, 489, 557
 Jack, 405
 L -positive, 463
 Macdonald, 405, 501
 monomial, 289
 m -positive, 291, 543
 of degree n , 286
 p -integral, 474
 power sum, 297, 460
 odd, 348
 p -positive, 463, 526
 Schur, *see* Schur function
 Schur positive, *see* symmetric function,
 s -positive
 s -integral, 474
 skew Schur, 398

- specialization of, 301
- s -positive, 396, 460, 462, 464, 480–482, 543, 557
- u -integral, 291
- u -positive, 291
- wreath product, 405
- zonal, 405
- symmetric functions
 - algebra of, 287
 - early history of, 396
- symmetric group, *see* group, symmetric
- symmetric plane partition, *see* plane partition, symmetric
- symmetric semigroup, *see* semigroup, symmetric
- symplectic group, *see* group, symplectic
- system, proper algebraic, 202, 249
 - component of, 203
 - solution to, 203
- SYT, *see* tableau, standard Young
- Szegő, G., 71, 250
- Székely, L. A., 70
- Szekeres, G., 404, 407
- table
 - character
 - column sums of, 472
 - row sums of, 474
 - inversion, 75, 259
- tableau
 - balanced, 454
 - border strip, 346, 468, 519
 - height of, 347
 - evacuation, 425
 - insertion, 318, 413
 - Littlewood–Richardson, 432
 - oscillating, 456
 - and representation theory, 500
 - skew, 500
 - P -, 463
 - recording, 318, 413
 - rim hook, 346
 - semistandard, 309
 - reverse, 314
 - shape of, 309
 - size of, 309
 - skew, 309
 - special square of, 496
 - type of, 309
 - weak, 379
 - standard, *see* tableau, standard Young
 - standard Young, 279, 312, 400
 - descent of, *see* descent, of an SYT
 - descent set of, *see* descent set, of an SYT
 - major index of, *see* index, major, of an SYT
 - of shape (n, n) , 226
 - pair of, 227
 - with at most k rows, 452
 - straight-shape, 415
 - up-down, 456
 - Takács, L., 265
 - Tamari lattice, *see* lattice, Tamari
 - Tamari, D., 270
 - tangent number, *see* number, tangent
 - Tarjan, R. E., 217, 261
 - teasing game, 419
 - telephone pole, *see* pole, telephone
 - Temperley–Lieb algebra, *see* algebra, Temperley–Lieb
 - tensor power, 444
 - tensor product, *see* product, tensor
 - tensor product representation, *see* representation, tensor product
 - Terao, H., 142
 - ternary tree, *see* tree, ternary
 - theorem
 - Aissen–Schoenberg–Whitney, 544
 - BEST, 68
 - block-tree, 120
 - Chung–Feller, 265
 - Eisenstein’s, 250
 - fundamental
 - of jeu de taquin, 421
 - of rational formal series, 202, 214
 - of symmetric functions, 292, 396
 - of (reverse) (P, ω) -partitions, 360
 - Greene’s, 414
 - matrix–tree, 60, 68, 155
 - non-messing-up, 496
 - Puiseux’s, 162, 163, 211
 - in characteristic p , 218
 - reciprocity, 543
 - Riemann–Roch, 211
 - theory
 - free probability, 131
 - Kazhdan–Lusztig, 545
 - path model, 510
 - Pólya, 390
 - precursor of, 558
 - subadditive ergodic, 554
 - Thibon, J.-Y., 406, 407, 409, 511, 518, 527, 533, 534, 543
 - Thoma, E., 545
 - Thomas, G., 438
 - Thrall, R. M., 400, 407
 - threshold arrangement, *see* hyperplane arrangement, threshold
 - threshold graph, *see* graph, threshold
 - Thürlings, K.-J., 535
 - Thurston, W. P., 217
 - Tischler, D., 267
 - Toeplitz matrix, *see* matrix, Toeplitz
 - Torgasev, A., 157
 - total partition, *see* partition, total

- totally positive matrix, *see* matrix, totally positive
- Touchard, J., 65, 66, 72, 264
- tour, 54
 - Eulerian, 54, 103
- tournament, 505
- Towber, J., 502
- trace of a plane partition, *see* plane partition, trace of
- transformation, Fourier, 528
- transformation, Knuth, 414
- transition matrix, *see* matrix, transition
- transitive factorization, 139
- transposition, 93
 - adjacent, 454
- tree
 - alternating, 90, 270
 - edge labeled, 92
 - noncrossing, 258, 270
 - binary, 220, 238, 239
 - plane, 36, 172, 173, 220
 - double rooted, 92
 - edge labeled, 81
 - free, 24
 - free bipartite, 82
 - generating, 274
 - intransitive, 90
 - inversion of, 93
 - k -edge colored, 81
 - local binary search, 91
 - noncrossing, 93
 - oriented, 55
 - plane, 30, 205, 220, 238, 239
 - trivalent, 220
 - with n vertices, 176
 - plane S -, 168
 - power, 131
 - recursively labeled, 92, 141
 - rooted, 23
 - ternary, 92
- triangle, monotone, 485
- triangle-free graph, *see* graph, triangle-free
- triangular number, *see* number, triangular
- triangular poset, *see* poset, triangular
- triangulation
 - of a polygon, 173, 220, 265
 - of $\text{conv}\{0, e_i - e_j\}$, 270
 - of the Möbius band, 242
- trigonometry, combinatorial, 73
- Trotter, W. T., 264
- Trudi, N., 397, 412
- Tsetlin, M. L., 398, 407
- Turan, P., 111
- Turchin, V., 542
- Tutte, W. T., 68, 71, 72
- two-line array, *see* array, two-line
- type
 - Lyndon, 480
 - of a plane forest, 30
 - of a planted forest, 30
 - of a semistandard tableau, *see* tableau, semistandard, type of
- Uhlenbeck, G. E., 65, 71, 120
- u -integral, *see* symmetric function, u -integral
- Ullman, D., 262
- unavoidable position, *see* position, unavoidable
- undecidability, 204
- unimodal polynomial, *see* polynomial, unimodal
- unimodal sequence, *see* sequence, unimodal
- up-down tableau, *see* tableau, up-down
- Vahlen, K. Th., 396, 412
- Vaidya, S., 251
- Väisänen, K., 266, 494
- Vallejo, E., 539
- Valquelin, D., 274
- Valtr, P., 268, 269
- Vandermonde matrix, *see* matrix, Vandermonde
- Vandiver, H. S., 541
- variety, flag, 276
- Vaughan, T., 513
- vector
 - column-sum, 290
 - row-sum, 290
- Vershik, A. M., 555
- vertical strip, *see* strip, vertical
- Vetta, A., 262
- vaxillary permutation, *see* permutation, vexillary
- Viennot, G. X., 109, 118, 217, 258, 264, 276, 278, 397, 400, 407, 412
- vier combinatorische Probleme, 66, 177, 213
- virtual character, *see* character, virtual
- Visentin, T. I., 523
- Vitale, M. R., 493
- Vo, K. P., 498
- Voiculescu, D. V., 131
- volume, relative, 234
- Vrećia, 504
- Vun, I., 217
- Wachs, M. L., 137, 141, 270, 412, 521, 551
- van der Waerden, B. L., 399, 412
- Wagner, A., 559
- Wagner, B., 517, 528
- Wagner, D. G., 512
- walk
 - in a graph, 102
 - on \mathbb{N} , 238
 - random, 285
- Walker, G., 406
- Walker, R. J., 217
- Wang, D.-L., 140
- Waterman, M. S., 276
- Wedderburn, J. H. M., 278
- Wedderburn–Etherington problem, *see* problem, Wedderburn–Etherington

- weight, of $f \in X^S$, 391
 Weiss, B., 140, 141
 Welker, V., 272, 504, 542
 West, J., 260, 274, 275, 498, 512
 Weyl character formula, *see* formula, Weyl character
 Weyl denominator formula, *see* formula, Weyl denominator
 Weyl dimension formula, *see* formula, Weyl dimension
 Weyl group, *see* group, Weyl
 Weyl, H., 404, 412
 Weyman, J., 504, 541
 White, D. E., 412, 438, 498, 518, 553
 White, N., 107
 Whitehead, T., 539
 Whitehouse, S., 542
 Whitney, A., 544
 Whitney, R., 403, 404, 411
 Whitworth, W. A., 121
 Wilf, H. S., 109, 216, 264, 401, 407
 Wine, R. L., 263
 Wisner, R. J., 256
 Woan, W.-J., 257, 258
 Wohlfahrt, K., 112
 Wolfgang, H. L., 551
 Wolstenholme, J., 145
 Woodcock, C. F., 250, 252, 254
 word
 Dyck, 205
 Łukasiewicz, 31, 67, 205
 Lyndon, 480
 reading, 415
 reduced, 248
 reverse reading, 432
 Yamanouchi, 313, 432
 Worley, D., 495
 wreath product, *see* product, wreath
 Wright, E. M., 402, 412, 491, 552
 Wronskian determinant, *see* determinant, Wronskian
 x -degree, *see* degree, x -,
 Yamanouchi word, *see* word, Yamanouchi
 Yan, C. H., 131
 Yang, M., 504
 Yeh, Y. N., 118
 Young diagram, *see* diagram, Young
 Young subgroup, *see* subgroup, Young
 Young tableau, *see* tableau, standard Young
 Young's lattice, *see* lattice, Young's
 Young, A., 400, 401, 412
 Young's rule, *see* rule, Young's
 Yutsis, *see* Jucis

 z_λ , 298
 Zagier, D., 523
 Zaks, S., 70, 130, 262
 Zapp, H.-Chr., 277
 Zaslavsky, T., 107
 zebra, 274
 Zeilberger, D., 216, 217, 265, 275, 281, 401, 407, 535, 552
 Zelevinskii, *see* Zelevinsky
 Zelevinsky, A. V., 215, 412, 436, 438, 493, 502, 508, 545
 Zernitz, H., 277
 zeta polynomial, *see* polynomial, zeta, of Q_n ,
 Ziegler, G. M., 107, 504
 Živaljević, R., 504
 zonotope, 107

