

## INDEX

### A

actual 05.2  
algebraic number 02.6, 12 07.9-11  
ambit 09.12, 16  
Archimedes 02.11  
Argand diagram 05.2 07.5  
associative 05.7  
average 10.11-12  
axiom of choice 02.5, 7, 10, 20

### B

band 09.14, 17, 20, 10.8, 10  
binomial 06.15 07.2 09.15 10.3  
Bourbaki 01.6  
Bolzano-Weierstrass theorem 02.31-33  
Broca's area 01.6

### C

cardinal 02.2, 5, 6, 27, 28  
Cartesian product 02.2, 4, 35  
Cantor diagonal argument 01.7 02.1-5, 21-24, 44  
Cauchy sequence 02.4, 12  
ch<sub>h</sub> 02.6, 41-47  
class field theory 07.11 08.1 09.2, 3, 10.2  
    number 10.1-2, 7  
cluster 08.16  
coefficient 05.5 06.1  
    algebra, exterior 05.5, 9  
    algebra, interior 05.5  
    algebra, relative 05.6  
column 10.4, 8  
complex number 02.6, 05.1-3  
compression 06.5-7  
computer program 01.7  
congruent (incongruent) 07.2, 4, 5, 11  
conjectures 01.4, 10  
constructable 02.7, 9, 17  
countable (enumerable) 02.1, 2, 4, 7, 8, 17-19  
crossing out method 08.5  
cubic reciprocity 07.1

## D

dense 02.1, 4, 26  
determinant 05.1, 2-4, 9 06.1, 7-10  
D1 exponential algebra 02.5, 13, 14 06.1, 14, 15 07.13, 14  
diffeomorphism 06.8  
Diophantine set 08.21  
discriminant 10.1-2, 7  
disparity 08.1, 3, 6, 8, 11, 12, 17, 22-24 09.1, 2, 11, 12, 10.1-4, 10  
    shifted 08.11, 12, 10.5  
    total 08.11, 12 09.3  
duplicate 06.1, 3, 4

## E

edge 09.14, 15  
Einstein 01.3  
Eisenstein representation 07.5-7  
elliptic function 07.8, 11.2  
errors 01.7-9  
Eternal Room 01.6  
Euclidean algorithm 01.10 07.1, 3 09.5  
Eudoxus number 02.6, 10, 11  
Euler relation 02.13 05.1, 2  
exoctonion 06.1, 4, 5  
expansion 06.5, 6  
exquaternion 06.1, 3  
extricate 06.1, 3

## F

factorise 05.1, 6  
Fermat's little theorem 07.1, 4 08.1  
floor function 08.1, 8, 16, 10.1  
fragment 09.8, 12, 13, 19, 10.6-7  
Frobenius automorphism 07.4, 6, 7

## G

Gaussian integer 07.10  
Galois theory 01.7 02.5, 9 03.1-6, 8 05.1 06.1, 11  
    antitone connection 02.1, 34-37  
Gentzen 02.7  
group character 06.1

## H

Heine-Borel theorem 02.31-33  
Heisenberg's principle of teaching 01.1  
hyperactual, 05.5 06.6  
hyperduplicate 06.5  
hyperimaginary 05.5 06.6  
hyperinfinitesimal 02.12  
hyperinfinity 02.4  
hyperintricate 05.1, 4 06.1, 2, 7  
hyperphantom 05.5 06.6

## I

infinitesimal 02.4-6, 11, 25, 29, 40, 41  
infinity, ordinal 02.4-6, 10, 27, 28  
insight 01.9  
interspersion 09.20, 21, 10.12  
intricate 05.1, 2 06.1, 2, 7  
intuitionism 02.9, 21  
inverse 06.10, 11

## J

J-abelian 06.1, 8-10  
*JAF* 05.9, 10 06.14, 15

## K

Kronecker 02.21 04.2

## L

ladder number 02.1-40 07.12  
lattice point 08.21, 10.4  
layer 05.4, 5 06.8  
Leibniz 02.6, 16

## M

matrix 05.1 06.1  
    antisymmetric 05.6 06.12  
    symmetric 05.6 06.11-14  
    transpose 05.6  
    upper triangular 05.6, 7  
multifunction 03.10

## N

Newton's method 02.35, 36 04.4, 5  
non associative 06.1  
non-commutation 05.3, 7 07.12  
non inertial transformation 03.5-8, 11  
nonstandard analysis 02.1, 5, 10

## O

occupancy theorem 08.2, 3

## P

parabola 08.1, 21, 24 09.1, 2, 12, 10.6, 10  
    for rows 09.4, 6, 14, 16, 17  
    for trajectories 09.9-11, 10.6-7  
phantom 05.2  
Picasso 01.2, 3  
polynomial 02.9 07.2  
prime 07.1, 3, 4, 6 08.1, 11.2-4

## Q

quadratic residue 07.2 08.1, 2, 6, 10, 11 09.1, 3, 4, 6, 10.1, 3, 5-6, 11.1  
quaternion 05.1, 7 06.1

## R

real 02.4, 7, 8, 10 05.2 06.7  
reciprocity, biquadratic (quartic) 07.1, 11.2  
    cubic 07.1, 11.4  
    quadratic 07.7, 11.1  
region H 08.2, 7-9  
representation (infinitesimal) 02.14, 15  
revolution 01.13 02.7  
roots 05.7-9 08.3  
row 08.1, 6, 7, 15, 16, 20, 10.2, 4-5, 8  
    blank 08.8, 9  
    T 08.7, 17, 18

## S

Schönberg 01.3  
Schur complement 06.10, 12, 13  
sedenion 06.1, 4  
semantics 01.6, 7 02.9, 16, 17 09.3  
sequence 02.7, 10

standard protocol 02.29  
stratum 09.6, 8, 19, 20  
superexponential 02.2, 5, 13, 14 07.12  
syntax 01.6, 7 02.9, 17

## T

Taylor series 05.3  
tensor 05.5 06.7  
tenth discriminant 09.1, 10.1-2  
tetration problem 02.5, 13, 14  
totient 07.3, 5  
trajectory 08.1, 3, 10, 15, 20  
    region 10.6-7  
    wrap-round 10.7  
transfer principle 02.4, 16, 17, 19

## U

ultrafilter 02.7, 10  
universal mathematics 01.5

## W

Wedderburn's little theorem 07.9  
well-ordering 02.4, 7, 20  
Wernicke's area 01.6

## Z

zero algebra 02.1, 5, 9, 41-47  
zheh 02.6, 41-47