

Index

• Numbers •

3-D geometry. *See* solid geometry
30:60:90 triangles, 118–119
45:45:90 triangles, 119–120

• A •

abscissa, 134
absolute value, 32–33, 383
acronym device, PEMDAS, 47
acronym device, SOHCAHTOA, 181
acute angles, 111
acute triangles, 384
adding. *See also* operations
 algebraic expressions, 54–55
 exponents, 35
 fractions, 41, 251
 real numbers, 31
 rules for, 214, 253
adjacent angles, 112, 180–181
algebra. *See also* functions
 coefficients, 34, 52
 constants, 51
 defined, 51
 equations, 51–52, 252
 expressions, 52
 hints on, 252
 history of, 52
 logarithms, 74–76
 monomials, 53
 polynomials, 53
 quadratic formula, 73–74, 149, 380
 quadratic identities, 73
 quadratic polynomials, 53
 terms (in equations), 51–53
 variables, 51–52
algebra operations
 addition, 54–55
 distribution, 61
 division, 56–59
 factoring, 59–61
 FOIL method, 57–59, 60
 gobbling rule, 65
 multiplication, 56–59
 subtraction, 54–55
 symbols for, 53–54
algebra problems
 distance/rate/time, 68–70, 379
 inequalities, 64–67
 linear equations, 62–64, 71–72
 mixture problems, 70–71
 overview, 61
 production/work rate/time, 68, 379
 quadratic equations, 72–74
 ranges, 66–67
 simultaneous equations, 71–72
 substitutions, 64
 variations, 67–68
 word problems, 62, 68–71
altitude (height) of triangles, 116
angles. *See also* triangles
 acute, 111
 adjacent, 112, 180–181
 central, 127–128
 complementary, 111
 defined, 110
 degree measures of, 193–194
 inscribed, 130–131
 interior, 114, 126, 385
 obtuse, 111, 112
 radian measures of, 193–194
 right, 111
 rules for, 112–113
 straight, 111
 supplementary, 111
 vertical, 112
answers. *See also* SAT II
 grids, being careful with, 20
 Level IC, practice test 1, 247, 251–264
 Level IC, practice test 3, 319, 323–338
 Level IIC, practice test 2, 281, 285–302
 Level IIC, practice test 4, 355, 359–374

answers (*continued*)

- wrong, crossing out, 15–16
- wrong, recognizing, 17
- arcs, 127, 128
- arcsine/arccos/arctan functions, 182–183
- area formulas. *See also* formulas; plane geometry; surface area
- circles, 127
- ellipses, 153
- lateral, of cylinders, 166
- parallelograms, 122
- rhombuses, 123
- squares, 123
- trapezoids, 123–124
- triangles, 116
- arguments of functions, 86
- arithmetic mean, 208, 380
- arithmetic operations. *See* operations
- associative property, 31
- asymptote lines, 99–102, 154, 195–196
- averages, statistical, 208–210, 380
- axis/axes
 - in coordinate geometry, 133–134
 - of cylinders, 165–166
 - in ellipses, 152–153
 - rotation around, 177–178
 - of symmetry, 103, 147, 177

• B •

bases

- as numbers, 34–35, 74
- of parallelograms, 122
- of pyramids, 172–173
- of trapezoids, 123
- of triangles, 116

binomials, 53

bisect/bisectors, 110

• C •

calculators, 11, 19–20, 181

Cartesian plane, 133–136. *See also* coordinate geometry

center (of ellipses), 153

central tendency measures, 207–210

circles. *See also* plane geometry

- arcs of, 127, 128

- area of, 127

- central angles in, 127–128

- chords in, 128, 385

- circle equation, 151–152, 380

- circumference of, 127

- circumscribed figures, 129–130

- defined, 126

- degree measures, 193, 194

- diameter of, 126, 127

- great circles, 170–171

- inscribed angles, 130–131

- inscribed figures, 129–130

- radian measures, 193–194

- radius/radii of, 126, 127

- sectors of, 128–129

- segments of, 129

- spheres, 170–172, 177

- tangent lines, 130, 131

- unit circles, 190–194

coefficients, 34, 52

cofunctions, 188

collinear points, 110

combinations (in sets), 226–227

common logarithms, 75

commutative property, 31

complementary angles, 111

composite numbers, 29

compound functions, 82–83

cones, 168–170, 177

congruent objects, 111

constants, 51

coordinate geometry. *See also* plane geometry; solid geometry

- Cartesian coordinates, 133–136

- circle equation, 151–152, 380

- conic section equations, 146–155

- coordinate planes, 133–135

- defined, 133

- distance formula, 143, 144–145

- ellipse equations, 152–153, 381

- graphing trigonometric functions, 194–196

- hyperbola equations, 154–155, 381

- linear equations, 136–145

- linear inequalities, 145–146

midpoint formula, 143–145
 parabola equations, 146–151, 381
 point-slope form, 140–143, 380
 polar coordinates, 135, 200–204
 rectangular coordinates, 135, 200
 slope, defined, 134, 137
 slope formula, 137–139
 slope-intercept formula, 136–137, 380
 slope rules, 139–140
 terminology, 133–136
 triaxial coordinates, 156–157
 cosecant/cotangent functions, 187–189
 cosine function, 180–182, 190–193
 Cosines, Law of, 198–200
 cube roots, 37
 cubes (3-D), 162–165
 cylinders, 165–168, 177

• **D** •

decagons, 125
 decimals, 39–40, 49
 degrees of functions, 105–106
 denominators, 40
 dependent variables, 77
 Descartes, Rene, 134
 diagonal line formulas of solids, 161–164,
 166–167
 diameter of circles, 126, 127
 direct variations, 67
 directrix, 146
 discriminants, 149
 dispersion measures in statistics, 210–213
 distance formula in coordinate geometry,
 143, 144–145
 distance/rate/time formula in algebra, 68–70,
 379
 distribution in algebra, 61
 distributive property, 32
 dividing. *See also* operations
 algebraic expressions, 56–59
 dividends in, 32
 exponents, 35
 fractions, 41–42, 251
 real numbers, 32
 rules for, 253

domain of functions. *See also* functions
 defined, 48, 77, 86
 examples, 88–89
 finding in graphs, 98–101
 with intervals, 91–93
 limitations, 86–87
 warning, 88

• **E** •

e as irrational number, 76
 elements of sets, 220
 ellipse equations, 152–153, 381
 equations. *See* algebra; coordinate geometry;
 formulas
 equilateral triangles, 113, 384
 even functions, 103
 even real numbers, 33
 exams. *See* SAT II
 exponents. *See also* operations
 adding/subtracting, 35
 and bases, defined, 34–35, 74
 as fractions, 36
 multiplying/dividing, 35
 negative exponents, 36–37
 warning, 37
 zero and one as, 36
 expressions, algebraic, 52
 extremes in proportion ratios, 46
 extremum/extrema of graphed functions,
 105–106

• **F** •

factorials in sets, 223, 227–228
 factoring in algebra, 59–61
 focus/foci of ellipses, 152
 focus/foci of parabolas, 146
 FOIL method, 57–59, 60
 formulas. *See also* surface; volume
 distance in 3-D space, 156–157
 percent change, 43
 repeated percent change, 44–45
 solid object diagonals, 161–164, 166–167
 statistical mean averages, 208–210, 380

formulas in algebra
 distance/rate/time, 68–70, 379
 natural logarithms, 76
 quadratic formula, 73–74, 149, 380
 work rate/time/production, 68, 379

formulas in coordinate geometry
 circles, 151, 380
 distance, 143, 144–145
 ellipses, 153, 381
 hyperbolas, 154, 381
 midpoint, 143–145
 parabolas, 146–151, 381
 point-slope, 140–143, 380
 slope, 137–139
 slope-intercept, 136–137, 380

formulas in plane geometry. *See also* area
 circles, 127
 interior angles, 114, 126
 Pythagorean theorem, 116
 right triangles, 116–120

fractions. *See also* operations
 adding/subtracting, 41
 as decimals, 39–40
 denominators, 40
 examples, 39–40, 49
 exponents as, 36
 mixed fractions, 48
 multiplying/dividing, 41–42, 251
 numerators, 40
 percent change operations, 42–45
 as percentages, 39–40, 49
 proper/improper fractions, 41
 ratios as, 45–46
 reducing/simplifying, 48–49
 warnings, 43, 44

frequency, 209

functions. *See also* domain; range;
 trigonometry
 compound functions, 82–83
 defined, 77
 degrees of, 105–106
 dependent variables in, 77
 domain of, 48, 77, 86–89, 91–93
 even functions, 103
 examples, 80–82
 independent variables in, 77

input/output of, 77, 78
 with intervals, 91–93
 inverse functions, 83–86
 “normal” functions, 78–80
 odd functions, 104
 paired values in, 79–80
 piecewise/split functions, 79
 range of, 48, 77, 89–93
 rational functions, 102
 symbols as, 77–78
 warnings, 78, 82, 88

functions, graphs of
 asymptote lines, 99–102
 finding domain and range, 98–101
 finding roots, 102–103, 105–106
 linear functions, 98–99, 105
 overview, 48, 93
 parabolas, 98–99, 103, 105–106
 periodic functions, 104–105
 symmetry in, 103–104
 vertical line test for, 93–98

• G •

general form equation of parabolas, 149–151, 381
 geometric mean, 210
 geometry. *See* coordinate geometry; plane geometry; solid geometry
 global maximum for graphed functions, 105
 gobbling rule in algebra, 65
 graphs, 48. *See also* coordinate geometry; functions; trigonometry
 groups. *See* sets
 guessing strategies, 15–17

• H •

Harvard University, 9
 height (altitude) of triangles, 116
 heptagons, 125
 hexagons, 125
 horizontal lines, 110
 hyperbola equations, 154–155, 381
 hypotenuse, 113, 180–181

• **I** •

imaginary numbers, 30
 improper fractions, 41
 independent variables, 77
 inequalities in algebra, 64–67
 input into functions, 77, 78
 inscribed angles, 130–131
 inscribed figures, 129–130
 inscribed solids, 173–176
 integers, 29, 383
 interior angle formulas, 114, 126
 interior angles, defined, 385
 intersecting lines, 110, 112
 intersections of sets, 220–221
 intervals, functions with, 91–93
 inverse functions, 83–86
 inverse variations, 68
 irrational numbers, 30
 isosceles triangles, 113, 384

• **L** •

Law of Cosines, 198–200
 Law of Sines, 196–198
 line/angle rules, 112–113
 line formulas, diagonal, 161–164, 166–167
 linear equations. *See also* coordinate geometry
 in algebra, 62–64, 71–72
 linear inequalities, 145–146
 midpoint formula, 143–145
 point-slope form, 140–143, 380
 slope formula, 137–139
 slope-intercept formula, 136–137, 380
 slope rules, 139–140
 linear functions, 98–99, 105
 lines/line segments, 110, 111
 lines, tangent, 130–131
 local extremum/extrema in graphed functions, 105–106
 logarithms, 74–76

• **M** •

major arcs of circles, 127

major axis of ellipses, 152
 math operations. *See* operations
 math symbols, 53–54, 62
 mean measures. *See also* statistical measures
 arithmetic mean, 208, 380
 geometric mean, 210
 weighted mean, 210
 means (in proportion ratios), 46
 median measures, 208
 members of sets, 220
 midpoint formula, 143–145
 midpoints in geometry, 110
 minor arcs of circles, 127, 128
 minor axis of ellipses, 153
 mixed fractions, 48
 mixture problems in algebra, 70–71
 mnemonic device, PEMDAS, 47
 mnemonic device, SOHCAHTOA, 181
 mode measures, 209–210
 monomials, 53
 multiplicative inverse, 38
 multiplying. *See also* operations
 algebraic expressions, 56–59
 exponents, 35
 fractions, 41–42, 251
 real numbers, 32
 rules for, 214–215, 253

• **N** •

natural logarithms, 76
 natural numbers, 28
 negative branches of hyperbolas, 154–155
 negative exponents, 36–37
 negative integers, 29
 negative real numbers, 33
 numbers. *See also* operations
 composite numbers, 29
 imaginary numbers, 30
 integers, 29, 383
 irrational numbers, 30
 natural numbers, 28
 overview, 27–28
 pi, 30
 prime numbers, 29–30
 rational numbers, 29, 384
 real numbers, 29, 86, 383

numbers (*continued*)
 whole numbers, 28
 zero, history of, 40
 numerators, 40

• 0 •

oblique circular cylinders, 165–166
 oblique triangles, 196–200
 obtuse angles, 111, 112
 obtuse triangles, 384
 octagons, 125
 odd functions, 104
 odd real numbers, 33
 operations. *See also* numbers
 decimals, 39–40, 49
 graphs and, 48
 order of, 47, 186
 percentages, 39–40, 49
 proportions, 46
 ratios, 45–46
 reciprocals, 38
 roots, 37–38
 scientific notation, 46
 simplifying radicals, 37–38
 symbols for, 62
 operations in algebra. *See also* algebra
 addition, 54–55
 distribution, 61
 division, 56–59
 factoring, 59–61
 FOIL method, 57–59, 60
 gobbling rule, 65
 multiplication, 56–59
 subtraction, 54–55
 symbols for, 53–54
 operations of exponents
 addition, 35
 division, 35
 exponents as fractions, 36
 exponents, defined, 34–35, 74
 multiplication, 35
 negative exponents, 36–37
 overview, 34–35
 subtraction, 35

warning, 37
 zero and one exponents, 36
 operations of fractions. *See also* fractions
 addition, 41
 division, 41–42
 examples, 39–40, 49
 multiplication, 41–42
 percent change, 42–45
 reducing/simplifying, 48–49
 subtraction, 41
 warnings, 43, 44
 operations of real numbers
 absolute value, 32–33, 383
 addition, 31
 division, 32
 even/odd numbers, 33
 example, 34
 multiplication, 32
 positive/negative numbers, 33
 real numbers, defined, 29, 86, 383
 subtraction, 31
 opposite side of right triangles, 180–181
 ordered pairs, 134
 ordinate, 134
 origin, 134
 output of functions, 77, 78

• p •

paired values in functions, 79–80
 parabolas. *See also* coordinate geometry;
 functions
 axis of symmetry, 103, 147
 defined, 146–147, 384
 finding domain and range, 98
 general form equation, 149–151, 381
 graphs of, 98–99, 103, 105–106
 quadratic formula and, 149
 standard form equation, 147–149, 381
 vertex/vertices of, 105, 106, 147
 parallel lines, 110
 parallelograms, 122–123
 PEMDAS mnemonic device, 47
 pentagons, 125, 126
 percentages, 39–40, 49

periodic functions, 104–105, 188–189
 permutations, 222–225
 perpendicular lines, 110
 pi, 30
 piecewise functions, 79
 plane geometry. *See also* circles; coordinate geometry; solid geometry; triangles
 circles, 126–131
 defined, 109
 history of, 110
 interior angle formulas, 114, 126
 interior angles, defined, 385
 line/angle rules, 112–113
 parallelograms, 122–123
 plane, defined, 110
 polygons, 125–126
 quadrilaterals, 121–125
 terminology, 109–112
 trapezoids, 123–125
 triangles, 113–121
 planes, tangent, 171
 point-slope form, 140–143, 380
 polar coordinates. *See also* coordinate geometry; trigonometry
 versus Cartesian coordinates, 135
 converting, 203–204
 defined, 200
 expressing in radians, 201–203
 labeling, 200–201
 versus rectangular coordinates, 200
 polygons, 125–126
 polynomials, 53
 Poorsina, Ravi, 8
 positive branches of hyperbolas, 154–155
 positive integers, 29
 positive real numbers, 33
 powers. *See* exponents
 practice tests. *See* SAT II Math practice
 prime numbers, 29–30
 prisms, 159
 probability measures, 213–216
 production/work rate/time formula, 68, 379
 proper fractions, 41
 proportions, 46
 pyramids, 172–173
 Pythagorean theorem, 114, 116–118, 123

• Q •

quadratic equations. *See also* algebra
 defined, 72
 factoring, 72–73
 quadratic formula, 73–74, 149, 380
 quadratic identities, 73
 quadratic polynomials, 53
 quadrilaterals. *See also* plane geometry
 defined, 121–122
 interior angle formulas, 126
 parallelograms, 122–123
 trapezoids, 123–125

• R •

radians
 calculator mode for, 19–20
 defined, 193–194
 expressing polar coordinates in, 201–203
 radicals, simplifying, 37–38
 radius/radii of circles, 126, 127
 range of functions. *See also* functions
 defined, 48, 77, 89
 finding in graphs, 98–101
 with intervals, 91–93
 negative signs in, 89–91
 rules for, 89
 range measures in statistics, 211
 range problems in algebra, 66–67
 rate/time/distance formula, 68–70, 379
 rate of work/time/production formula, 68, 379
 rational functions, 102
 rational numbers, 29, 384
 ratios. *See also* fractions
 defined, 45–46
 overview, 29, 30
 of right triangles, 117–120
 rays in geometry, 110, 111
 real numbers. *See also* operations
 absolute value, 32–33, 383
 adding/subtracting, 31
 defined, 29, 86, 383
 even/odd numbers, 33
 example, 34

- real numbers (*continued*)
 - multiplying/dividing, 32
 - positive/negative numbers, 33
 - reciprocal trigonometric functions, 187–188
 - reciprocals, 38
 - rectangles, 123
 - rectangular coordinate plane, 135, 200. *See also* coordinate geometry
 - rectangular solids. *See also* solid geometry
 - cubes, 162–164
 - defined, 159–160
 - diagonal line formulas, 161–164
 - edges, 161
 - surface area formulas, 160–161, 162
 - volume formulas, 160, 162, 165
 - warnings, 163, 165
 - rhombuses, 122, 123
 - right angles, 111
 - right circular cylinders, 165–166
 - right rectangular prisms, 159
 - right triangles. *See also* triangles; trigonometry
 - 45:45:90 triangles, 119–120
 - 30:60:90 triangles, 118–119
 - common ratios of, 117–118
 - defined, 113
 - opposite side of, 180–181
 - Pythagorean theorem of, 116–117
 - warning, 117
 - roots. *See also* zeroes
 - as equation solutions, 62, 149
 - of functions, 102–103, 105–106
 - of numbers, 37–38
 - rotation in solid geometry, 177–178
- S •**
- SAT II Math practice test 1, Level IC
 - answers, 247, 251–264
 - instructions, 233, 235
 - questions, 236–246
 - reference table, 234
 - scoring, 248–249
 - SAT II Math practice test 2, Level IIC
 - answers, 281, 285–302
 - instructions, 267, 269
 - questions, 270–280
 - reference table, 268
 - scoring, 282–283
 - SAT II Math practice test 3, Level IC
 - answers, 319, 323–338
 - instructions, 305, 307
 - questions, 308–318
 - reference table, 306
 - scoring, 320–321
 - SAT II Math practice test 4, Level IIC
 - answers, 355, 359–374
 - instructions, 341, 343
 - questions, 344–354
 - reference table, 342
 - scoring, 356–357
 - SAT II Math tests
 - format of, 11
 - topics covered on, 12
 - which level to take, 9–10
 - SAT II test scores
 - canceling, 14
 - as college admissions requirement, 7–8
 - as college placement tool, 8
 - how reported, 14
 - how University of California uses, 8
 - SAT II test-taking strategies
 - answer grids and, 20
 - breathing, 22
 - using calculators, 19–20
 - crossing out wrong answers, 15–16
 - guessing, 15–17
 - hard questions, 21
 - managing time, 18, 21
 - using own watch, 18
 - recognizing wrong answers, 17
 - relaxation techniques, 21–23
 - staying focused, 20
 - stretching, 22
 - things not to do, 20–21
 - thinking positively, 23
 - warnings, 20, 23
 - SAT II tests
 - Harvard University and, 9
 - retaking, 14
 - scoring, 13
 - subject categories, 8
 - warnings, 9, 11

- what to take to, 10–11
- when to take, 10
- which to take, 9–10
- scientific notation, 46
- scoring SAT II tests
 - Level IC, practice test 1, 248–249
 - Level IC, practice test 3, 320–321
 - Level IIC, practice test 2, 282–283
 - Level IIC, practice test 4, 356–357
 - overview, 13
- secant function, 187–189
- sectors of circles, 128–129
- segments of circles, 129
- segments, line, 110, 111
- semi-minor axis of ellipses, 153
- sets
 - combinations, 226–227
 - defined, 220
 - elements/members of, 220
 - factorials, 223, 227–228
 - group problems, 217–219
 - intersections of, 220–221
 - permutations, 222–225
 - unions of, 220, 221–222
- similar triangles, 120–121
- simultaneous equations, 71–72
- sine function, 180–182, 190–193
- Sines, Law of, 196–198
- skewed results, 209–210
- slope. *See also* coordinate geometry
 - defined, 134, 137
 - point-slope form, 140–143, 380
 - rules for, 139–140
 - slope formula, 137–139
 - slope-intercept formula, 136–137, 380
- SOHCAHTOA mnemonic device, 181
- solid geometry. *See also* coordinate geometry;
plane geometry; surface area; volume
 - changing dimensions, 176–177
 - cones, 168–170, 177
 - cubes, 162–164, 162–165
 - cylinders, 165–168, 177
 - defined, 159
 - diagonal line formulas, 161–164, 166–167
 - inscribed solids, 173–176
 - pyramids, 172–173
 - rectangular solids, 159–162, 165
 - rotation, 177–178
 - spheres, 170–172, 177
 - warnings, 163, 165, 168
- solutions. *See* roots; zeroes
- speed. *See* rate
- spheres, 170–172, 177
- split functions, 79
- square roots, 37
- squares in geometry, 123
- standard deviation, 211–213
- statistical measures
 - arithmetic mean, 208, 380
 - of averages, 208–210, 380
 - of central tendency, 207–210
 - defined, 207
 - of dispersion/variation, 210–213
 - geometric mean, 210
 - median, 208
 - mode, 209–210
 - of probability, 213–216
 - range, 211
 - skewed results in, 209–210
 - standard deviation, 211–213
 - weighted mean, 210
- straight angles, 111
- substitution problems in algebra, 64
- subtracting. *See also* operations
 - algebraic expressions, 54–55
 - exponents, 35
 - fractions, 41
 - real numbers, 31
 - rules for, 253
- supplementary angles, 111
- surface area formulas. *See also* area; formulas;
solid geometry
 - cones, 168–169
 - cubes, 162
 - cylinders, 166
 - rectangular solids, 160–161, 162
 - spheres, 170
- symbols
 - for algebraic operations, 53–54
 - for arithmetic operations, 62
 - functions as, 77–78
- symmetry, axis/axes of, 103, 147, 177
- symmetry in function graphs, 103–104

• T •

tangent function, 180–182, 196
 tangent lines, 130, 131
 tangent planes, 171
 terms in algebraic equations, 51–53
 terms of fractions, 40
 tests. *See* SAT II
 tetrahedrons, 173
 Third Side Rule (of triangles), 116
 three-D geometry. *See* solid geometry
 time/rate/distance formula, 68–70, 379
 time/work rate/production formula, 68, 379
 trapezoids, 123–125
 triangles. *See also* angles; plane geometry;
 right triangles; trigonometry
 acute triangles, 384
 area of, 116
 defined, 113
 equilateral triangles, 113, 384
 interior angle formulas, 126
 isosceles triangles, 113, 384
 obtuse triangles, 384
 Pythagorean theorem, 114, 116–118, 123
 right triangles, 113, 116–120
 rules for, 112–116
 similar triangles, 120–121
 terminology, 110–112
 vertex/vertices of, 113
 warning, 117
 triaxial coordinates, 156–157
 trigonometric identities, 186–187, 188
 trigonometry, 179. *See also* triangles
 trigonometry functions, graphing. *See also*
 functions
 converting polar coordinates, 203–204
 on coordinate planes, 194–196
 expressing polar coordinates in radians,
 201–203
 labeling polar coordinates, 200–201
 overview, 189–190
 unit circles, 190–194
 trigonometry functions in oblique triangles
 Law of Cosines, 198–200
 Law of Sines, 196–198
 overview, 196

trigonometry functions in right triangles
 arcsin/arccos/arctan, 182–183
 cofunctions, 188
 cosecant/cotangent, 187–189
 cosine, 180–182, 190–193
 examples, 188–189
 order of operations, 186
 overview, 179–180
 reciprocal functions, 187–188
 secant, 187–189
 sine, 180–182, 190–193
 SOHCAHTOA mnemonic device, 181
 tangent, 180–182
 trinomials, 53

• U •

unions of sets, 220, 221–222
 unit circles, 190–194
 University, Harvard, 9
 University of California, 8

• V •

variables, 51–52, 77
 variance, 212
 variation measures in statistics, 210–213
 variation problems in algebra, 67–68
 vertex/vertices
 of ellipses, 153
 of parabolas, 98, 105
 of triangles, 113
 vertical angles, 112
 vertical line test for graphs, 93–98
 vertical lines, 110
 volume formulas. *See also* formulas; solid
 geometry
 cones, 168
 cubes, 162
 cylinders, 166
 dimension changes and, 176
 pyramids, 173
 rectangular solids, 160, 162, 165
 rotation and, 177–178
 spheres, 170

• W •

weighted means, 210
whole numbers, 28
word problems in algebra, 62, 68–71
work rate/time/production formula, 68, 379

• X •

x-axis, 133
X-intercept, 134

• Y •

y-axis, 134
Y-intercept, 134

• Z •

z-axis, 156
zeroes. *See also* roots
as exponents, 36
of graphed functions, 102–103, 105–106, 149
history of, 40

