

Index

• Symbols and Numerics •

\approx (approximately equals), 34–35, 67

$\{ \}$ (braces), 288

$[\neq]$ (doesn't equal), 66

\div (division sign), 51

\cdot (dot), 44–45

\dots (ellipses), 288

$=$ (equal to), 343–344

$\frac{\quad}{\quad}$ (fraction bar), 51

$/$ (fraction slash), 51

$>$ (greater than), 67

∞ (infinity)

defined, 20

overview, 345

$<$ (less than), 67

$-$ (minus sign), 39

9 times table, 49

$()$ (parentheses)

order of precedence in expressions with,
79–82

overview, 45

removing from algebraic expressions,
310–333

removing from equations, 323–326

$\%$ (percent)

changing decimals to, 181

circle, 188–191

converting fractions into, 182–183

converting to decimals, 181

converting to fractions, 182

decreases, 201–204

defined, 179

greater than, 100, 180

increases, 201–204

multiplying, 198–201

solving problems, 183–186

types of problems, 187–188

word problems, 195, 201–204

$+$ (plus sign), 38

π (pi)

measuring, 241

overview, 343

2-D shapes

measuring, 239–240

overview, 233–236

3-D

measuring in, 246–250

shapes with curves, 238–239

x (algebraic symbol)

defined, 298

isolating, 320–327

using in algebraic equations, 298, 316

\times (multiply sign), 44

• A •

A (area). *See also* formulas

circle formula, 241

defined, 239

parallelogram formula, 245

rectangle formula, 244

rhombus formula, 245

square formula, 243

trapezoid formula, 246, 268

triangle formula, 242, 268

absolute value, 70

acute angles, 232

addends, 38

adding

algebraic terms, 305–306

arithmetic equations, 76

associative operations, 60

carrying digits, 38–39

commutative operations, 59

decimals, 164–165

exponents, 210

expressions, 76

fractions, 136–143

inverse operations, 58–59

- adding (*continued*)
- large numbers in columns, 38–39
 - mixed numbers, 148–151
 - negative numbers, 62–63
 - on the number-line, 18–19
 - overview, 37–39
 - units, 65
 - word problems, 193–195
- addition. *See* adding
- algebra
- declaring variables, 333–334
 - solving word problems, 330–333, 334–338
 - word problems overview, 329
- Algebra For Dummies* (Sterling), 345, 350
- Algebra II For Dummies* (Sterling), 288
- algebraic equations. *See also* algebraic expressions; arithmetic equations
- balancing scale, 318–321
 - cross-multiplication, 326–327
 - isolating x , 320–321
 - overview, 316
 - rearranging terms, 321–323
 - removing parentheses, 323–326
 - setting up, 331–332
 - solving, 317–318, 332
 - using x in, 316
- algebraic expressions. *See also* algebraic equations; arithmetic equations
- adding terms, 305–306
 - algebraic terms, 301–302
 - arithmetic expressions versus, 299
 - coefficient, 304
 - distribution, 311–312
 - dividing terms, 308–309
 - evaluating, 299–301
 - FOILing, 312–313
 - multiplying terms, 307
 - overview, 298–299
 - parentheses, 310–311, 312–313
 - rearranging terms, 302–303
 - removing parentheses, 310–313
 - similar terms, 304–305
 - simplifying, 309–313
 - subtracting terms, 306
 - variable, 304
- algebraic numbers, 350
- algebraic terms
- adding, 305–306
 - defined, 302
 - dividing, 308–309
 - multiplying, 307
 - rearranging, 302–303
 - subtracting, 306
- angles, 231–232
- \approx (approximately equals), 34–35, 67
- area (A). *See also* formulas
- circle formula, 241
 - defined, 239
 - parallelogram formula, 245
 - rectangle formula, 244
 - rhombus formula, 245
 - square formula, 243
 - trapezoid formula, 246, 268
 - triangle formula, 242, 268
- arithmetic equations. *See also* algebraic equations; algebraic expressions
- defined, 72
 - evaluations, 73–74
 - expressions, 73, 298–299
 - order of operations, 74–82
 - properties of equality, 72–73
- arithmetic expressions, algebraic
- expressions versus, 299
- Arnone, Wendy, *Geometry For Dummies*, 229
- associative operations, 60
- attribute, 276
- B •**
- b (base), 242. *See also* formulas
- balancing scale
- defined, 318–319
 - using, 319–321
- bar graph, 252–253
- base (b), 242. *See also* formulas
- base number, 68
- basic unit, 220
- book
- conventions, 2
 - icons, 6
 - organization, 3–6

borrowing process, 41–43
boxes, finding the volume of, 248
{ } (braces), 288

• C •

C (circumference), 241. *See also* formulas
C subset, 353
Cantor, Georg, 345, 354
capacity. *See* fluid volume
cardinality of sets, 289
carrying digits, 38–39
Cartesian coordinate system
 drawing lines, 257–258
 overview, 255, 344
 plotting points, 256
 word problems, 259–260
Cartesian graph
 drawing lines, 257–258
 overview, 255, 344
 plotting points, 256
 word problems, 259–260
Celsius, Fahrenheit versus, 225
Centi-, ten metric prefix, 221
certain outcome, 283
chart, place value, 31
circles
 area formula, 241
 circumference formula, 241
 defined, 233
 diameter formula, 240–241
 measuring, 240–241
 π (pi), 241
circumference (C), 241. *See also* formulas
closed set, 348
coefficient, 304
column addition, 38
commutative
 operations, 59
 property defined, 59
 property of multiplication, 23
complement, of sets, 293–294
complex numbers, 352–353
composite numbers
 defined, 15–16
 identifying, 102–104

cones
 defined, 238
 finding the volume of, 249–250
constant, 298, 302
conventions, used in this book, 2
conversion
 equations, 265–267
 factors, 225–226
conversion chains
 defined, 262
 setting up, 262–264
 word problems, 261–267
converting
 decimals to fractions, 172–174
 decimals to percents, 181
 fractions to decimals, 174–175
 fractions to percents, 182–183
 measurement units, 225–227
 percents to decimals, 181
 percents to fractions, 182
 units, 227
coordinates
 Cartesian, 255–260
 defined, 256
counting
 by numbers, 13–14
 outcomes, 284–286
counting numbers
 defined, 18, 25
 overview, 348
 set, 26
cross-multiplication
 fractions, 131–132
 overview, 326–327
cubes, finding the volume of, 247–248
cylinders
 defined, 238
 finding the volume of, 249

• D •

d (diameter). *See also* formulas
 circle formula, 240–241
 defined, 233
 measuring, 240–241

- data
 - qualitative, 277–279
 - qualitative versus quantitative, 276–277
 - quantitative, 279–282
 - Deca-, ten metric prefix, 221
 - Deci-, ten metric prefix, 221
 - decimal point, moving, 161–162
 - decimals
 - adding, 164–165
 - changing fractions to, 174–177
 - converting to fractions, 172–174
 - dividing, 168–171
 - leading zeros, 159–160
 - money and, 156–158
 - moving the decimal point, 161–162
 - multiplying, 166–167, 198–201
 - overview, 156–163
 - place value, 158–159
 - repeating, 176
 - rounding, 162–163
 - subtracting, 166
 - terminating, 177
 - trailing zeros, 159–161
 - word problems, 194–195
 - decompose, 16
 - denominators
 - adding fractions, 137–143
 - adding mixed numbers, 149–151
 - defined, 122
 - subtracting fractions, 144–147
 - subtracting mixed numbers, 151–153
 - diameter (d). *See also* formulas
 - circle formula, 240–241
 - defined, 233
 - measuring, 240–241
 - difference, 40
 - digital root, finding, 99
 - digits
 - carrying, 38–39
 - numbers versus, 30
 - distance
 - estimating, 223–224
 - units of, 221
 - distribution
 - algebraic expressions, 311–312
 - overview, 61
 - distributive property
 - of multiplication over addition, 61
 - overview, 202
 - dividend, 51, 169
 - dividing
 - algebraic terms, 308–309
 - arithmetic equations, 77
 - decimals, 168–171
 - expressions, 77
 - fractions, 136
 - inverse operations, 58–59
 - long, 52–53
 - mixed numbers, 147–148
 - negative numbers, 64
 - noncommutative operations, 59
 - number-line, 23–24
 - overview, 51–54
 - remainders, 54
 - symbols, 51
 - units, 65–66
 - divisibility
 - checking, 99–102
 - composite numbers, 102–104
 - prime numbers, 102–104
 - tricks, 97–102
 - divisible, 97
 - division. *See* dividing
 - ÷ (division sign), 51
 - divisor, 51
 - [≠/] (doesn't equal), 66
 - (dot), 44–45
 - drawing, lines, 257–258
- E •**
- elements, 288, 341
 - ... (ellipsis), 288
 - empty sets
 - defined, 19
 - overview, 290–291
 - English system of measurement, 217–220
 - equal sets, 289–290
 - = (equal to), overview, 343–344
 - equality, properties, 72
 - equations. *See also* algebraic equations
 - adding arithmetic, 76
 - defined, 71, 316

dividing arithmetic, 77
multiplying, 77
overview, 72–74
polynomial, 350
rearranging terms, 321–327
subtracting, 76
word problems, 264–265

equilateral triangle, 234
equivalent sets, 289–290
estimating
metric system, 223–225
numbers, 34–35

evaluation. *See also* solving
algebraic expressions, 299–301
defined, 71
overview, 73–74

even numbers, 13

exponents
adding, 210
multiplying, 210
multiplying with, 17–18
order of operations in expressions with,
78–79
overview, 68–69
powers of ten, 208–210

expressions
addition, 76
algebraic, 298–301
applying order of operations to, 75–78
defined, 71
division, 77
mixed-operator, 77–78
multiplication, 77
order of operations and exponential,
78–79
order of precedence with parenthetical,
79–82
overview, 73–74
subtraction, 76

● **F** ●

factorization, prime, 112–114, 115–116, 118
factorization tree, prime factors, 110–112
factors
conversion, 225–226
defined, 44

finding the GCF (greatest common factor), 114–115
generating, 108–109
identifying, 107–108
multiples and, 106–107
prime, 109–114

Fahrenheit, Celsius versus, 225
favorable outcome, 283
finding the value of an expression. *See* evaluation

First, Outside, Inside, and Last (FOILing),
312–313

five regular solids, 237–238
fluid ounces, ounces versus, 219
fluid volume, units of, 219
FOILing (First, Outside, Inside, and Last),
312–313

formulas (2-D shapes)
circles, 240–241
parallelograms, 245
rectangles, 244
rhombuses, 244–245
squares, 243
trapezoids, 246, 268
triangles, 242–243, 268, 271

formulas (3-D shapes)
box volume, 248
cone volume, 249–250
cube volume, 247–248
cylinder volume, 249
prism volume, 248–249
pyramid volume, 249–250
sphere volume, 247

formulas (circle)
area, 241
circumference, 241
diameter, 240–241
 π (pi), 241

formulas (parallelogram)
area, 245
perimeter, 245

formulas (rectangle)
area, 244
perimeter, 244

formulas (rhombus)
area, 245
perimeter, 244

- formulas (square)
 - area, 243
 - perimeter, 243
 - formulas (trapezoid), area, 246, 268
 - formulas (triangle)
 - area, 242, 268
 - hypotenuse, 242–243
 - Pythagorean theorem, 242–243, 271
 - (fraction bar), 51
 - / (fraction slash), 51
 - fractions
 - adding, 136–143
 - changing to decimals, 174–177
 - converting decimals to, 172–174
 - cross-multiplying, 131–132
 - denominator, 122–124
 - dividing, 136
 - improper, 125–126
 - increasing terms of, 126–127
 - mixed numbers, 125
 - mixed numbers and improper, 129–131
 - multiplying, 133–135, 196–198
 - number-line, 24–25
 - numerator, 122–124
 - ones and zeros, 124–125
 - overview, 122–123
 - proper, 125–126
 - reciprocal, 124
 - reducing, 127–129
 - subtracting, 143–147
 - terms of, 126–129
 - word problems, 194
 - functions, overview, 344–345
 - Fundamental Theorem of Arithmetic, 112
- **G** ●
- GCF (greatest common factor)
 - defined, 114
 - finding, 114–116
 - geometry
 - 2-D shapes, 233–236, 239–246
 - 3-D shapes with curves, 238–239
 - angles, 231–232
 - boxes, 248
 - circles, 233, 240–241
 - cones, 249–250
 - cubes, 247–248
 - cylinders, 249
 - kites, 235
 - lines, 230–231
 - measurements and, 272–274
 - measuring 2-D shapes, 239–246
 - measuring 3-D shapes, 246–250
 - parallelograms, 235, 245
 - plane, 230–232
 - points, 230
 - polygons, 234–236
 - polyhedrons, 237–238
 - prisms, 248–249
 - pyramids, 249–250
 - quadrilaterals, 234–235
 - rectangles, 235, 239–240, 243–244
 - rhombuses, 235, 244–245
 - shapes, 232
 - solid, 236–239
 - spheres, 247
 - squares, 235, 243
 - trapezoids, 235, 246
 - triangles, 234, 241–243
 - word problems, 267–271, 272–274
 - Geometry For Dummies* (Arnone), 229
 - Giga-, ten metric prefix, 221
 - graph
 - bar, 252–253
 - Cartesian, 255–260
 - defined, 251
 - line graph, 254–255
 - pie chart, 253–254
 - styles, 252–260
 - > (greater than), 67
 - greatest common factor (GCF)
 - defined, 114
 - finding, 114–116
- **H** ●
- h (height), measuring, 242, 244–245, 246
 - Hecta-, ten metric prefix, 221
 - height (h), measuring, 242, 244–245, 246
 - Hindu-Arabic numbers, 30
 - horizontal axis (x-axis), 255
 - hypotenuse, finding, 242–243

• I •

icons, used in this book, 6
identical sets, 289–290
imaginary numbers, 346, 351–352
impossible outcome, 283
improper fractions, 125–126
 mixed numbers and, 129–131
increasing, terms of fractions, 126–127
inequalities, 66–67
 ∞ (infinity)
 defined, 20
 overview, 345
integers
 defined, 25
 overview, 348–349
 set, 26
interest, 203
intersection, of sets, 292–293
inverse
 defined, 58
 operations, 58–59
irrational numbers
 defined, 27
 overview, 349–350
irregular polygon, 236
isolating, x , 320–327
isosceles triangle, 234

• K •

Kilo-, ten metric prefix, 221
kite, 235

• L •

l (length), measuring, 243–244
LCM (least common multiple)
 defined, 116
 finding, 116–118
leading zeros, 159–160
 placeholders versus, 31–32
least common multiple (LCM)
 defined, 116
 finding, 116–118
length (l), measuring, 243–244

< (less than), 67
like terms, identifying, 304–305
limit, 345
line graph, 254–255
line segment, 231
lines
 drawing, 257–258
 geometry, 230
long division, 52–53
long numbers, 32

• M •

magnitude, order of, 213
mass
 defined, 222
 units of, 222
math concepts
 Cartesian graph, 344
 equal signs and equations, 343–344
 functions, 344–345
 imaginary numbers, 346
 infinity (∞), 345
 number-line, 346
 pi (π), 343
 prime numbers, 342
 sets, 341
 zero, 342
Mayan numerals, 360–361
mean
 defined, 280
 finding, 280–281
measurements, geometry, 272–274
measures
 English system of measurement, 217–220
 metric system, 220–222
measuring
 in 3-D, 246–250
 circles, 240–241
 parallelograms, 245
 rectangles, 243–244
 rhombuses, 244–245
 shapes, 239–250
 squares, 243
 trapezoids, 246
 triangles, 241–243

- median
 - defined, 281
 - finding, 281–282
 - Mega-, ten metric prefix, 221
 - members. *See* elements
 - metric prefixes, basic, 221
 - metric system
 - estimating, 223–225
 - overview, 220–222
 - metric units, basic, 220
 - Micro-, ten metric prefix, 221
 - Mili-, ten metric prefix, 221
 - minuend, 40
 - (minus sign), 39
 - mixed numbers
 - adding, 148–151
 - components, 130
 - defined, 125
 - dividing, 147–148
 - improper fractions and, 129–131
 - multiplying, 147–148
 - subtracting, 151–153
 - mixed-operator expressions, 77–78
 - mode, 279
 - multiples
 - defined, 22
 - factors and, 106–107
 - generating, 116
 - multiplicand, 44
 - multiplication. *See also* multiplying
 - zero property of, 47
 - multiplication table, finding the LCM (least common multiple) using the, 117–118
 - multiplicative identity, 47
 - multiplier, 44
 - x (multiply sign), 44
 - multiplying
 - algebraic terms, 307
 - arithmetic equations, 77
 - associative operations, 60
 - commutative operations, 59
 - cross, 131–132
 - decimals, 166–167, 198–201
 - distributive property of multiplication, 61
 - with exponents, 17–18, 68–69
 - exponents, 210
 - expressions, 77
 - fractions, 133–135, 196–198
 - inverse operations, 58–59
 - large numbers, 49–50
 - mixed numbers, 147–148
 - multiplication table, 45–48
 - negative numbers, 64
 - number-line, 22–23
 - overview, 44–50
 - percents, 198–201
 - with scientific notation, 214–215
 - symbols, 44–45
 - table, 47–48
 - units, 65–66
 - word problems, 196–201
- *N* •
- N subset, 353
 - Nano-, ten metric prefix, 221
 - natural numbers, 18
 - defined, 25
 - overview, 348
 - set, 26
 - negate, 40
 - negative numbers
 - adding, 62–63
 - dividing, 64
 - multiplying, 64
 - number-line, 21
 - overview, 61–62
 - subtracting, 62–63
 - nested
 - defined, 26
 - parentheses with expressions, 81–82
 - Newton, Sir Isaac, 345
 - non-repeating decimal, 27
 - non-terminating, non-repeating decimal, 350
 - noncommutative operations, 59
 - nothing. *See* zeros
 - number-line
 - adding, 18–19
 - dividing, 23–24
 - fractions, 24–25
 - multiplying, 22–23

negative numbers, 21
 overview, 18, 346
 subtracting, 18–19
 zero, 19–20
 number sequences
 composite numbers, 15–16
 counting by numbers, 13–14
 even, 13
 exponents, 17–18
 odd, 13
 overview, 12
 prime numbers, 16
 square numbers, 14
 number sets
 algebraic numbers, 350
 complex numbers, 352–353
 counting numbers, 348
 imaginary numbers, 351–352
 integers, 348–349
 irrational numbers, 349–350
 natural numbers, 348
 rational numbers, 349
 real numbers, 351
 subsets, 353
 transcendental numbers, 351
 transfinite numbers, 353–354
 types, 347–354
 numbers. *See also* numerals
 algebraic, 350
 base, 68
 complex, 352–353
 composite, 15–16, 102–104
 condensing with scientific notation,
 207–215
 counting, 18, 25, 26, 348
 defined, 355
 digits versus, 30
 estimating, 34–35
 even, 13
 Hindu-Arabic, 30
 imaginary, 346, 351–352
 invention, 12
 irrational, 349–350
 long, 32
 mixed, 125, 148–151

natural, 18, 25, 26, 348
 negative, 61–64
 odd, 13
 prime, 102–104, 342
 rational, 25, 27, 349
 real, 25, 351
 rounding, 33–34
 sets of, 25–27, 291
 transcendental, 351
 transfinite, 353–354
 numerator, 122



obtuse angles, 232
 odd numbers, 13
 ones, fractions, 124–125
 operations
 associative, 60
 commutative, 59
 inverse, 58–59
 on sets, 291–294
 order of magnitude, 213
 order of operations
 applying to expressions, 75–78
 defined, 72
 expressions with exponents, 78–79
 overview, 74–75
 order of precedence. *See also* order of
 operations
 expressions with parentheses, 79–82
 organization, of this book, 3–6
 origin, 255
 ounces, fluid ounces versus, 219
 outcomes, counting, 284–286



P (perimeter). *See also* formulas
 overview, 233, 239
 parallelogram formula, 245
 rectangle formula, 244
 rhombus formula, 244
 square formula, 243
 parallel, 231

- parallelograms
 - area formula, 245
 - defined, 235
 - measuring, 245
 - perimeter formula, 245
- parentheses ()
 - order of precedence in expressions with, 79–82
 - overview, 45
 - removing from algebraic expressions, 310–313
 - removing from equations, 323–326
- () (parentheses)
 - order of precedence in expressions with, 79–82
 - overview, 45
 - removing from algebraic expressions, 310–313
 - removing from equations, 323–326
- percent (%)
 - changing decimals to, 181
 - circle, 188–191
 - converting fractions into, 182–183
 - converting to decimals, 181
 - converting to fractions, 182
 - decreases, 201–204
 - defined, 179
 - greater than, 100, 180
 - increases, 201–204
 - multiplying, 198–201
 - solving problems, 183–186
 - types of problems, 187–188
 - word problems, 195, 201–204
- percent circle, 188–191
- perimeter (P). *See also* formulas
 - overview, 233, 239
 - parallelogram formula, 245
 - rectangle formula, 244
 - rhombus formula, 244
 - square formula, 243
- periods, 32
- π (pi)
 - measuring, 241
 - overview, 343
- pie chart, 253–254
- place value
 - chart, 31
 - decimals, 158–159
 - overview, 30–32
- placeholders, leading zeros versus, 31–32
- plane geometry, 230
- plotting a point, 256
- + (plus sign), 38
- points
 - geometry, 230
 - plotting, 256
- polygons
 - defined, 234
 - types, 234–236
- polyhedrons, 237
- polynomial equation, 350
- possible outcome, 283
- powers. *See* exponents
- powers of ten, exponents, 208–210
- prefixes
 - basic metric, 221
 - defined, 220
- prime factorization
 - finding, 112–114
 - finding the GCF (greatest common factor) using, 115–116
 - finding the LCM (least common multiple) using, 118
- prime factors
 - defined, 109
 - factorization tree, 110–112
- prime numbers
 - defined, 16
 - identifying, 102–104
 - overview, 342
- prisms, finding the volume of, 248–249
- probability
 - calculating, 283
 - counting outcomes, 284–286
 - defined, 282
- Probability For Dummies* (Rumsey), 282
- problems. *See* word problems
- product, 44, 106
- proper fractions, 125–126
- properties, of the Big Four Operations, 57–61

pyramids, finding the volume of, 249–250
 Pythagorean theorem, 242–243

• Q •

Q subset, 353
 quadrilaterals
 defined, 234
 types, 234–235
 qualitative data
 defined, 276
 working with, 277–279
 quantitative data
 defined, 276–277
 working with, 279–282
 quotient, 51

• R •

r (radius)
 defined, 233, 247
 measuring, 240–241
 R subset, 353
 radical. *See* square root
 radius (r)
 defined, 233, 247
 measuring, 240–241
 rational numbers
 defined, 25
 overview, 349
 set, 27
 ray, 231
 reading, long numbers, 32
 real number line. *See* number–line
 real numbers
 defined, 25
 overview, 351
 reciprocal fractions, 124
 rectangles
 area formula, 244
 defined, 235
 measuring, 243–244
 perimeter formula, 244
 reducing fractions, 127–129
 reflexivity, 72

regular polygon, 236
 relative complement, of sets, 293
 remainder, 54
 removing, parentheses from equations,
 323–326
 repeating decimals, 176
 rhombus
 area formula, 245
 defined, 235
 measuring, 244–245
 perimeter formula, 244
 right angle, 232
 right triangle, 234
 Roman numerals, 359–360
 root. *See* square root
 rounding
 conversion equations, 265–267
 decimals, 162–163
 numbers, 33–34
 Rumsey, Deborah
 Probability For Dummies, 282
 Statistics For Dummies, 276

• S •

s (length of a square's side), measuring, 243
 scalene triangle, 234
 scientific notation
 condensing numbers with, 207–215
 defined, 210
 multiplying with, 214–215
 order of magnitude, 213
 powers of ten as exponents, 208–210
 writing in, 211–215
 sets
 cardinality of, 289
 complement, 293–294
 defined, 25, 287, 341
 elements, 288–289
 empty, 290–291
 equal, 289–290
 intersection, 292–293
 of numbers, 25–27, 291
 operations on, 291–294
 overview, 288

sets (*continued*)

- relative complement, 293

- symbols, 288

- union of, 292

shapes

- 2-D, 233–236

- 3-D, 238–239

- defined, 232

- measuring, 239–250

SI (System of International Units), metric

- system, 220

similar terms

- combining, 309–310

- identifying, 304–305

simplifying. *See also* evaluation

- algebraic expressions, 309–313

solid, defined, 236

solid geometry

- defined, 236

- overview, 236–239

solving. *See also* evaluation

- algebra word problems, 330–333

- algebraic equations, 317–318, 332

- algebraic word problems, 334–338

- basic word problems, 85–90

- complex word problems, 90–95

- geometry word problems, 267–271

- percent problems, 183–186

- problems on a Cartesian graph, 259–260

speed

- estimating, 224

- units of, 220, 222

spheres

- defined, 238

- finding the volume of, 247

square numbers, 14

square root

- defined, 351

- overview, 69

square units, 240

squares

- area formula, 243

- defined, 235

- measuring, 243

- perimeter formula, 243

statistics

- defined, 275–276

- mean, 280–281

- median, 281–282

- mode, 279

- percentages, 278–279

- qualitative data, 276–279

- quantitative data, 279–282

Statistics For Dummies (Rumsey), 276

Sterling, Mary Jane

- Algebra For Dummies*, 345, 350

- Algebra II For Dummies*, 288

straight angle, 232

straight line, 230

subsets

- defined, 290

- overview, 353

subtracting

- algebraic terms, 306

- arithmetic equations, 76

- borrowing, 41–43

- decimals, 166

- expressions, 76

- fractions, 143–147

- inverse operations, 58–59

- larger numbers, 40–43

- mixed numbers, 151–153

- negative numbers, 62–63

- noncommutative operations, 59

- on the number-line, 18–19

- overview, 39–43

- units, 65

- word problems, 193–195

subtraction. *See* subtracting

subtrahend, 40

sum, 38. *See also* adding

surface area, 247

switch, 40

symmetry, 72

System of International Units (SI), metric

- system, 220

● T ●

temperature

- estimating, 224–225

- units of, 220, 222

terminating decimal, 177

terms

- adding algebraic, 305–306
- defined, 301
- dividing algebraic, 308–309
- of fractions, 126–129
- multiplying algebraic, 307
- rearranging, 302–303, 321–327
- subtracting algebraic, 306

3-D

- measuring in, 246–250
- shapes with curves, 238–239

time, units of, 219, 222

trailing zeros

- decimals, 159–161
- defined, 160

transcendental numbers, 351

transfinite numbers, 353–354

transitivity, 72

trapezoids

- area formula, 246, 268
- defined, 235
- measuring, 246

triangles

- area formula, 242, 268
- hypotenuse formula, 242–243
- measuring, 241–243
- Pythagorean theorem, 242–243, 271
- types, 234

trigonometry, 351

2-D shapes

- measuring, 239–240
- overview, 233–236

• U •

U (Universal set), 293

undefined, 98, 125

union, of sets, 292

units

- adding, 65
- basic metric, 220
- converting, 227
- defined, 64
- distance, 221
- dividing, 65–66
- fluid volume, 219

mass, 222

measurement, 226

multiplying, 65–66

speed, 220, 222

subtracting, 65

temperature, 220, 222

time, 219, 222

volume, 221

weight, 219

units of measurement

canceling, 226

converting, 225–227

Universal set (U), 293

• V •

variable

declaring, 330–331

defined, 298

identifying, 304

selecting, 333–334

vertical axis (y-axis), 255

volume

box formula, 248

cone formula, 249–250

cube formula, 247–248

cylinder formula, 249

defined, 247

estimating, 224

prism formula, 248–249

pyramid formula, 249–250

sphere formula, 247

units of, 221

• W •

w (width), measuring, 243–244

weight

defined, 222

English system of measurement, 217–220

estimating, 224

metric system, 220–222

units of, 219

width (w), measuring, 243–244

word equations. *See also* word problems

defined, 85

turning word problems into, 85–88

word problems. *See also* word equations

- adding, 193–195
- algebra, 329–338
- Cartesian graph, 259–260
- conversion chains, 261–267
- decimals, 194–195
- equations, 264–265
- fractions, 194
- geometry, 267–271, 272–274
- multiplying decimals and percents, 198–201
- multiplying fractions, 196–198
- overview, 84–85
- percents, 195, 201–204
- solving, 85–95, 267–271
- solving on a Cartesian graph, 259–260
- subtracting, 193–195
- turning into word equations, 85–88
- writing, in scientific notation, 211–215

• X •

x (algebraic symbol)

- defined, 298
- isolating, 320–327
- using in algebraic equations, 298, 316

x (multiply sign), 44

x-axis (horizontal axis), 255

• Y •

y-axis (vertical axis), 255

• Z •

Z subset, 353

Zeno's Paradox, 346

zero property of multiplication, 47

zeros

- fractions, 124–125
- leading, 159–160
- number-line, 19–20
- overview, 342
- placeholders versus leading, 31–32
- trailing, 159–161