

Key Vocabulary Index

Mathematical terms are best understood when you see them used and defined *in context*. This index lists where you will find key vocabulary. A full glossary is available in your Record and Practice Journal and at BigIdeasMath.com.

- absolute value, 270
- algebraic expression, 112
- base, 12
- box-and-whisker plot, 460
- coefficient, 112
- common factors, 32
- common multiples, 38
- composite figure, 172
- constant, 112
- conversion factor, 234
- coordinate plane, 276
- dependent variable, 316
- edge, 356
- equation, 296
- equation in two variables, 316
- equivalent expressions, 128
- equivalent rates, 206
- equivalent ratios, 198
- evaluate, 18
- exponent, 12
- face, 356
- factor pair, 26
- factor tree, 26
- factoring an expression, 140
- first quartile, 414
- five-number summary, 460
- frequency, 441
- frequency table, 441
- graph of an inequality, 328
- greatest common factor, 32
- histogram, 442
- independent variable, 316
- inequality, 326
- integers, 250
- interquartile range, 414
- inverse operations, 303
- leaf, 436
- least common denominator, 42
- least common multiple, 38
- like terms, 136
- mean, 398
- mean absolute deviation, 420
- measure of center, 404
- measure of variation, 414
- median, 404
- metric system, 234
- mode, 404
- negative numbers, 250
- net, 362
- numerical expression, 18
- opposites, 250
- order of operations, 18
- origin, 276
- outlier, 399
- percent, 220
- perfect square, 13
- polygon, 152
- polyhedron, 356
- positive numbers, 250
- power, 12
- prime factorization, 26
- prism, 356
- pyramid, 356
- quadrants, 276
- quartiles, 414
- range, 414
- rate, 206
- ratio, 192
- ratio table, 198
- reciprocals, 64
- solid, 356
- solution, 302
- solution of an equation in two variables, 316
- solution of an inequality, 327
- solution set, 327
- statistical question, 392
- statistics, 392
- stem, 436
- stem-and-leaf plot, 436
- surface area, 362
- terms, 112
- third quartile, 414
- unit analysis, 234
- unit rate, 206
- U.S. customary system, 234
- variable, 112
- Venn diagram, 30
- vertex, 356
- volume, 374

Student Index

This student-friendly index will help you find vocabulary, key ideas, and concepts. It is easily accessible and designed to be a reference for you whether you are looking for a definition, real-life application, or help with avoiding common errors.

A

Absolute value, 268–273

- defined, 270
- error analysis, 272
- real-life application, 271

Addition

- Associative Property of, 127–131
 - Commutative Property of, 126–131
 - of decimals, 78–83
 - error analysis, 82
 - real-life application, 81
 - writing, 82
 - equations
 - error analysis, 305
 - real-life application, 304
 - solving by, 300–307
 - of fractions, 42–43
 - inequalities
 - solving by, 332–337
 - Property
 - of Equality, 303
 - error analysis, 130
 - of Inequality, 334
 - real-life application, 129
 - of Zero, 129
 - whole numbers, 4
- Addition Property of Equality, 303
- real-life application, 304
- Addition Property of Inequality, 334
- Addition Property of Zero, 129

Algebra

- equations
 - in one variable, 294–299
 - solving, 300–313
 - in two variables, 314–321
 - expressions
 - simplifying, 135–139
 - writing, 110–123
 - inequalities
 - graphing, 324–331
 - solving, 332–343
 - writing, 326
- Algebraic expression(s)**, 110–117
- defined, 112
 - error analysis, 115, 116

evaluating

- with two operations, 114
 - with two variables, 113
- factoring, 141
- like terms
 - combining, 136
 - defined, 136
- real-life application, 114
- simplifying, 135
- terms
 - defined, 112
 - like, 136
- writing, 112–113

Area

- of a composite figure, 172–173
 - real-life application, 173
 - of a parallelogram, 152–157
 - error analysis, 156
 - formula, 154
 - real-life application, 155
 - of a polygon
 - real-life application, 177
 - of a trapezoid, 166–171
 - error analysis, 170
 - formula, 168
 - real-life application, 169
 - writing, 167
 - of a triangle, 158–163
 - error analysis, 162
 - formula, 160
 - real-life application, 161
 - research, 163
 - writing, 163
- Associative Property of Addition, 126–131
- error analysis, 130
- Associative Property of Multiplication, 126–131

B

Base, defined, 12

- Base ten blocks for modeling
- decimal addition, 78
 - decimal division, 92–93
 - decimal multiplication, 84
 - decimal subtraction, 78

Box-and-whisker plot(s), 458–465

- defined, 460
- error analysis, 463
- five-number summary, 460

C

Choose Tools, Throughout. For example, see:

- data displays
 - choosing, 465
 - measures of center, 465
 - variation of distribution, 465
 - decimals
 - adding, 82
 - ordering, 261
 - subtracting, 82
 - equations in two variables, 315, 320
 - parallelograms, area of, 156
 - ratios, graphing, 215
 - ratio tables, 215
- Coefficient**, defined, 112
- Common Error
 - polygons in the coordinate plane, 177
 - reflecting points in the coordinate plane, 283
 - writing expressions, 120, 129

Common factors, defined, 32

Common multiple(s), 36–41

defined, 38

Commutative Property of Addition, 126–131

- real-life application, 129
- Commutative Property of Multiplication, 126–131

Comparing

- integers, 254–259
- ratios, 210–215

Composite figure(s)

- area of, 172–173
- real-life application, 173
- defined, 172

Concept circle, 410

- Connections to math strands
- Algebra, 116, 117, 138

Geometry, 91, 99, 130, 139, 141, 195, 231, 283, 299, 306, 342, 373

Constant, defined, 112

Conversion factor, defined, 234

Coordinate plane
 defined, 276
 distances in, 277
 finding distances, 176
 graphing in, 274–283
 error analysis, 279
 ordered pairs, 276–277
 origin, 276
 polygons in the, 174–179
 error analysis, 178
 real-life application, 177
 writing, 178
 quadrant, 276
 real-life application, 278
 reflecting points in, 282–283

Critical Thinking, *Throughout. For example, see:*
 absolute value, 273
 area of a polygon, 163, 171
 data displays
 box-and-whisker plots, 465
 histograms, 445, 447
 shapes of distribution, 455
 stem-and-leaf plots, 439
 decimals, 83
 division, 9
 equations, solving, 307
 greatest common factor, 35
 inequalities
 graphing, 331
 solving, 343
 least common multiples, 41
 mean absolute deviation, 423
 measures of center, 409
 percents, 223
 modeling, 223
 prime numbers, 29
 rectangular prism, volume and surface area, 378
 statistical questions, 394
 surface area
 of a prism, 365
 of a pyramid, 373
 trapezoids, 171
 triangles, 162, 163, 171
 unit conversion, 237

Customary system, *See* U.S. customary system



Data analysis, *See* Data displays;
 Statistics

Data displays, *See also* Graphs and graphing
 box-and-whisker plots, 458–465
 defined, 460
 error analysis, 463
 five-number summary, 460
 shapes of, 462
 comparing, 444
 dot plots, 392–395
 frequency table, 441
 histograms, 440–447
 defined, 442
 error analysis, 445, 446
 modeling, 441
 shapes of distribution, 450–457
 appropriate measures of center and variation, 456–457
 box-and-whisker plots, 462
 skewed left, 452
 skewed right, 452
 symmetric, 452
 stem-and-leaf plots, 434–439
 defined, 436
 error analysis, 438
 leaf, 436
 stem, 436
 writing, 438

Decimal(s)
 adding, 78–83
 error analysis, 82
 modeling, 78
 real-life application, 81
 writing, 82
 dividing, 92–99
 by decimals, 95
 error analysis, 97, 98
 modeling, 92–93
 real-life application, 96
 by whole numbers, 94
 writing, 93
 graphing, 262–263
 multiplying, 84–91
 by decimals, 87
 error analysis, 89, 90
 modeling, 84–85
 real-life application, 88
 by whole numbers, 86

ordering, 260–265
 negative, 262
 subtracting, 78–73
 error analysis, 82
 modeling, 78–79
 real-life application, 81
 writing, 82

Definition and example chart, 216

Denominator(s), least common, 42

Dependent variable, defined, 316

Diagram(s)
 double number line, 205
 modeling, 191
 tape, 191, 193
 Venn, 30–31, 36, 37
 defined, 30

Different Words, Same Question, *Throughout. For example, see:*
 absolute value, 272
 box-and-whisker plots, 463
 converting units, 236
 fractions
 dividing, 74
 multiplying, 74
 greatest common factor, 34
 inequalities, 329
 measures of variation, 416
 percents, 229
 surface area of a prism, 364
 triangles, 162
 unit rates, 208
 volume of a prism, 378
 writing equations, 298
 writing expressions, 122

Distance formula, 318

Distributive Property, 132–141
 error analysis, 137, 138
 modeling, 132
 real-life application, 135
 writing, 137

Division
 of decimals, 92–99
 by decimals, 95
 error analysis, 97, 98
 modeling, 92–93
 real-life application, 96
 by whole numbers, 94
 writing, 93
 equations
 real-life application, 311
 solving by, 308–313

- of fractions, 62–69
 - error analysis, 67
 - by a fraction, 65
 - modeling, 63
 - reciprocals, 64
 - by a whole number, 66
- inequalities
 - solving by, 338–343
- of mixed numbers, 70–75
 - error analysis, 74
 - modeling, 70–71
 - real-life application, 73
- Property
 - of Equality, 311
 - of Inequality, 340
- whole numbers, 4–6
 - error analysis, 8
 - by a fraction, 65
 - real-life application, 6
- Division Property of Equality, 311
 - error analysis, 312
 - real-life application, 311
 - writing, 312
- Division Property of Inequality, 340
 - real-life application, 341
- Dot plot(s), 392–395



Edge, defined, 356

Equality

- Addition Property of, 303
- Multiplication Property of, 310
- Subtraction Property of, 303

Equation(s)

- defined, 296
- inverse operations, 303
- in one variable
 - error analysis, 298
 - real-life application, 297
 - writing, 294–299
- solution, 302
- solving
 - by addition, 300–307
 - by division, 308–313
 - error analysis, 305, 312
 - by multiplication, 308–313
 - real-life application, 304, 311
 - by subtraction, 300–307
 - writing, 305, 312

Equation in two variables, 314–321

- defined, 316
- dependent variable, 316
- error analysis, 319

- graphing, 317
- independent variable, 316
- real-life application, 318
- solution of, 316
- writing, 314–321

Equivalent expressions

- defined, 128
- identifying, 140
- using properties to write, 128–129

Equivalent rate(s), 205–209

- defined, 206
- finding, 207

Equivalent ratios

- defined, 198
- error analysis, 202

Error Analysis, *Throughout. For example, see:*

- absolute value, 272
- area
 - of a parallelogram, 156
 - of a trapezoid, 170
 - of a triangle, 162
- Associative Property of Addition, 130
- converting units, 236
- coordinate plane, 279
- data displays
 - box-and-whisker plots, 463
 - histograms, 445, 446
 - stem-and-leaf plots, 438
- decimals
 - adding, 82
 - dividing, 97, 98
 - multiplying, 89, 90
 - subtracting, 82
- Distributive Property, 137, 138
- equations
 - in one variable, 298
 - solving, 305, 312
 - in two variables, 319
- exponents, 14
- expressions
 - algebraic, 115, 116
 - writing, 122
- fractions
 - dividing, 67
 - multiplying, 59, 60
 - writing, 222
- greatest common factor, 34
- inequalities
 - graphing, 330
 - solving, 336, 342

- integers
 - comparing, 258
 - positive, 252
- mixed numbers
 - dividing, 74
 - multiplying, 60
- order of operations, 20
- percents, 222
 - finding the whole, 230
 - of a number, 229
- polygons in the coordinate plane, 178
- powers, 14
- prime factorization, 28
- ratio tables, 202
- statistics
 - mean absolute deviation, 422
 - measures of center, 407
 - measures of variation, 416
- whole numbers
 - dividing, 8
 - multiplying, 8

Evaluate, defined, 18

Example and non-example chart, 322

Exponent(s), 10–15

- base of, 12
- defined, 12
- error analysis, 14
- order of operations, 18
- powers and, 10–15
- writing, 11

Expression(s)

- algebraic, 110–117
 - defined, 112
 - error analysis, 115, 116
 - evaluating, 113–114
 - factoring, 141
 - like terms, 136
 - real-life application, 114
 - simplifying, 135
 - terms, 112
 - writing, 112
- equivalent
 - defined, 128
 - identifying, 140
 - using properties to write, 128–129
- evaluating, 18
 - error analysis, 20
- factoring, 140–141
 - defined, 140

- numerical
 - defined, 18
 - factoring, 140
- writing, 118–123
 - error analysis, 122
 - as powers, 12
 - real-life application, 121, 129

F

Face, defined, 356

Factor(s)

- common, defined, 32
- greatest common, 30–35
 - defined, 32
 - error analysis, 34
 - real-life application, 33
- pairs, defined, 26
- prime factorization, 24–29
 - error analysis, 28
 - writing, 27
- repeated, 11

Factor pairs, defined, 26

Factor tree, defined, 26

Factoring an expression, 140–141
defined, 140

First quartile, defined, 414

Five-number summary, defined, 460

Formulas

- area
 - of a parallelogram, 152–157
 - of a trapezoid, 168
 - of a triangle, 160
- distance, 318
- volume of a rectangular prism, 29, 374–376

Four square, 164

Fraction(s)

- adding, 42–43
- dividing, 62–69
 - error analysis, 67
 - by a fraction, 65
 - mixed numbers by, 72
 - modeling, 63
 - reciprocals, 64
 - a whole number by, 65
- graphing, 262–263
- least common denominator, 42
- multiplying, 54–61
 - error analysis, 59, 60
 - modeling, 61

- real-life application, 57, 58
- writing, 59
- ordering, 260–265
 - negative, 262
 - real-life application, 263
- percents and, 218–223
- subtracting, 42–43
- writing
 - error analysis, 222
 - as percents, 218–223

Frequency, defined, 441

Frequency table, defined, 441

G

Geometry

- coordinate plane, 174–179, 274–283
- nets, 360–363, 368–371
- parallelograms, 152–157
- perimeter, 177–178
- polygons, 152–157, 174–179
- polyhedrons, 354–359
- prisms, 356, 360–365, 374–379
- project, 359, 379
- pyramids, 356, 368–373
- solids, 354–373
- trapezoids, 166–171
- triangles, 158–163

Graph(s) and graphing, *See also*

- Data displays
- in the coordinate plane, 274–283
 - error analysis, 279
 - ordered pairs, 276–277
 - origin, 276
 - quadrant, 276
 - real-life application, 278
- of equations in two variables, 317
- of inequalities, 324–331
- of ratios, 210–215

Graph of an inequality

- defined, 328
- error analysis, 330
- modeling, 330
- real-life application, 328
- writing, 329

Graphic Organizers

- concept circle, 410
- definition and example chart, 216
- example and non-example chart, 322

- four square, 164
- information frame, 22
- information wheel, 124
- notetaking organizer, 76
- process diagram, 366
- summary triangle, 266
- word magnet, 448

Greatest common factor, 30–35

- defined, 32
- error analysis, 34
- modeling, 30–31, 37
- real-life application, 33
- writing, 34

H

Histogram(s), 440–447

- defined, 442
- error analysis, 445, 446
- frequency, 441
- frequency tables, 441
- modeling, 441

I

Independent variable, defined, 316

Inequalities

- defined, 326
- graphing, 324–331
 - defined, 328
 - error analysis, 330
 - modeling, 330
 - real-life application, 328
 - writing, 329
- solution of, 327
- solution set, 327
- solving
 - by addition, 332–337
 - by division, 338–343
 - error analysis, 336, 342
 - by multiplication, 338–343
 - real-life application, 335, 341
 - by subtraction, 332–337
 - writing, 336, 338
- writing, 324–331
 - error analysis, 330
 - modeling, 330
 - real-life application, 328

Information frame, 22

Information wheel, 124

Integer(s), 248–253

- comparing, 254–259
- error analysis, 258

- real-life application, 257
- writing, 258
- graphing, 251
- negative, defined, 250
- opposites, 250
- ordering, 254–259
- positive
 - defined, 250
 - error analysis, 252
 - writing, 250
- real-life application, 251
- writing, 249
- Interquartile range**, 414–417
 - defined, 414
- Interval(s), 440–442
- Inverse operations**, defined, 303



- Leaf**, defined, 436
- Least common denominator**, defined, 42
- Least common multiple**, 36–41
 - defined, 38
 - modeling, 36–37, 40
 - real-life application, 39
 - writing, 40
- Like terms**
 - combining, 136
 - defined, 136
- Line plot, *See* Dot plot(s)
- Logic, *Throughout. For example, see:*
 - area of parallelograms, 157
 - dividing mixed numbers, 75
 - histograms, 447
 - mean absolute deviation, 419
 - median, 447
 - reflecting points in the
 - coordinate plane, 283
 - relationship of operations, 8
 - shapes of distribution, 455
 - solids, 356
 - solving inequalities, 343
 - statistics, 319, 419
 - unit rates, 209



- Mean**, 396–401
 - defined, 398
 - modeling, 397
 - research, 408

- Mean absolute deviation**, 418–423
 - defined, 420
 - error analysis, 422
 - finding, 420
 - real-life application, 421
- Meaning of a Word
 - associate, 127
 - commute, 126
 - deviate, 418
 - distribute, 132
 - invert, 64
 - opposite, 250
 - percent, 218
 - skewed, 451
- Measurement
 - conversion factor
 - defined, 234
 - metric system
 - defined, 234
 - metric units
 - converting to customary units, 232–237
 - unit analysis
 - defined, 234
 - writing, 236
 - unit conversion, 232–237
 - error analysis, 236
 - U.S. customary system
 - converting to metric units, 232–237
 - defined, 234
- Measures of center**, 396–409
 - choosing, 405
 - by shape of distribution, 456–457
 - defined, 404
 - error analysis, 407
 - mean, 396–391
 - defined, 398
 - median, 402–409
 - defined, 404
 - mode, 402–409
 - defined, 404
 - research, 408
- Measures of variation**, 412–417
 - defined, 414
 - error analysis, 416
 - interquartile range, 414–417
 - defined, 414
 - quartiles, 414–417
 - defined, 414
 - first, 414
 - third, 414

- range, 412–417
 - defined, 414
 - writing, 417
- Median**, 402–409
 - defined, 404
 - error analysis, 407
 - research, 408
- Mental Math, *Throughout. For example, see:*
 - Distributive Property, 132, 134
 - equations, 301
 - multiplying decimals, 86
 - percents, 225
 - using properties, 127
- Metric system**
 - converting units, 232–237
 - error analysis, 236
 - defined, 234
- Mixed number(s)
 - dividing, 70–75
 - error analysis, 74
 - by a fraction, 72
 - modeling, 70–71
 - real-life application, 73
 - multiplying, 57–58
 - error analysis, 60
 - subtracting, 43
- Mode**, 402–409
 - defined, 404
 - research, 408
- Modeling, *Throughout. For example, see:*
 - decimals
 - adding, 78
 - subtracting, 78–79
 - diagrams, 191
 - Distributive Property, 132
 - expressions
 - writing, 123
 - frequency tables, 441
 - greatest common factor
 - Venn diagram, 30
 - inequalities
 - graphing, 330
 - writing, 330
 - least common multiples, 36–37, 40
 - line graph, 280
 - line plots, 390
 - mixed numbers, dividing, 70–71
 - rates, 205
 - ratios, 191, 205
 - statistics, 390
 - mean, 397
 - whole number operations, 9

Multiples

- least common, 36–41
 - modeling, 36–37, 40
 - real-life application, 39
 - writing, 40

Multiplication

- Associative Property of, 126–131
- Commutative Property of, 126–131

of decimals, 84–91

- by decimals, 87
- error analysis, 89, 90
- modeling, 84–85
- real-life application, 88

of fractions, 54–61

- error analysis, 59, 60
- modeling, 61
- real-life application, 57, 58
- writing, 59

inequalities

- solving by, 338–343

of mixed numbers, 57–58

- error analysis, 60

Property

- of Equality, 310
- of Inequality, 340
- of One, 129
- of Zero, 129

solving equations by, 308–313**whole numbers, 4**

- by decimals, 86
- error analysis, 8

Multiplication Property of Equality, 310**Multiplication Property of Inequality, 340****error analysis, 342****Multiplication Property of One, 129****Multiplication Property of Zero, 129****Multiplicative Inverse Property, 310****N****Negative number(s)**

- defined, 250

Net

- defined, 362
- of a prism, 360–363
 - rectangular, 362
 - triangular, 363
- of a pyramid, 368–373
 - square, 370
 - triangular, 371

Notetaking organizer, 76**Number line**

- for graphing
 - decimals, 262–263
 - fractions, 262–263
 - integers, 251
- for ordering
 - decimals, 260–267
 - fractions, 260–267
 - integers, 254–259

Number Sense, *Throughout. For example, see:*

- algebraic expressions, 115
- box-and-whisker plots, 463

Commutative Property of**Addition, 130****decimals**

- dividing, 97
- multiplying, 89
- ordering, 264

division, 8**expressions**

- writing, 123

fractions, 74

- multiplying, 60, 61
- ordering, 264, 265
- reciprocal of, 69

histograms, 447**integers, 253****least common multiple, 41****mixed numbers**

- dividing, 74
- multiplying, 61

order of operations, 21, 115**ordered pairs, 281****percents, 222**

- finding, 229

powers, 15**ratios, 194**

- comparing and graphing, 214

equivalent, 201**solving equations, 312****solving inequalities, 337****statistical questions, 394****statistics**

- mean, 400
- measures of center, 407

Numerical expression(s)

- defined, 18
- writing, 20

O**Open-Ended, *Throughout. For example, see:***

- area of a polygon, 163, 171

Associative Property of Addition, 130, 137**Associative Property of Multiplication, 130****box-and-whisker plots, 465****coordinate plane, 281****decimals**

- adding, 83
- multiplying, 91

Distributive Property, 137**Division Property of Equality, 312****equations**

- in one variable, 298
- in two variables, 321

factoring expressions, 141**fractions, 67**

- multiplying, 60

greatest common factor, 35**inequalities, solving, 342, 343****integers, 252****mixed numbers, 59****Multiplication Property of One, 130****order of operations, 21****percents and fractions, 222****polygons in the coordinate plane, 179****reciprocals, 67****relating variables, 320****shapes of distribution, 457****statistics, 401**

- measures of variation, 417

Subtraction Property of**Inequality, 336****trapezoids, 171****triangles, 163****Operations****choosing among, 2–3****order of, 16–21**

- defined, 18

- error analysis, 20

- real-life application, 19

- writing, 20

whole numbers, 2–9**Opposites, defined, 250****Order of operations, 16–21**

- defined, 18

- error analysis, 20

- exponents, 18

- real-life application, 19

- writing, 20

Ordered pairs, 276–277

Ordering
decimals, 260–265
fractions, 260–265
real-life application, 263
integers, 254–259

Origin, defined, 276

Outlier(s)

checking for, 415
defined, 399



Parallelogram(s)

area of, 152–157
error analysis, 156
formula, 154
real-life application, 155

Patterns, *Throughout*. For example, see:

exponents, 15
powers, 15
recognition of, 63
writing expressions, 123

Percent(s), 218–223

defined, 220
error analysis, 222
finding, 224–231
error analysis, 229, 230
of a number, 224–226
real-life application, 228
the whole, 227
fractions and, 218–223
real-life application, 221
research, 223
writing, 222
error analysis, 222
as fractions, 218–223, 219
fractions as, 218–223

Perfect square

defined, 13
real-life application, 13

Perimeter

of a rectangle
finding, 177
writing, 178

Polygon(s)

area of, 152–157
error analysis, 156, 162, 170
real-life application, 155, 161, 169, 173, 177
research, 163
writing, 156, 163

in the coordinate plane, 174–179
error analysis, 178
finding distances, 176
real-life application, 177
writing, 178

defined, 152

Polyhedron(s), *See also* Solids

defined, 356
edges of, 356
faces of, 356
project, 359
research, 559
vertices of, 356

Positive number, defined, 250

Powers, 10–15

defined, 12
error analysis, 14
exponents and, 10–15
writing, 11

Precision, *Throughout*. For example, see:

absolute value, 269
dividing decimals, 99
equations in two variables, 319
frequency tables, 441
polygons in the coordinate plane, 179
ratios, 195
comparing, 211
graphing, 211
statistics, 401
surface area of a pyramid, 372

Prime factorization, 24–29

defined, 26
error analysis, 28
factor pairs, 26
factor tree, 26
modeling, 29, 31

Prism(s)

defined, 356
drawing, 357
nets for, 360–363
defined, 362
a rectangular, 362
a triangular, 363
surface area of, 360–365
a rectangular, 362
a triangular, 363
volume of rectangular, 374–379

Problem Solving, *Throughout*. For example, see:

decimals
dividing, 99
ordering, 265

dividing fractions, 69
equations in two variables, 321
greatest common factor, 35
histograms, 446
ratios, 203
statistics

mean absolute deviation, 423
measures of center, 408, 423
volumes of prisms, 379

Process diagram, 366

Properties

Addition Property of Equality, 303
Addition Property of Inequality, 334
Addition Property of Zero, 129
Associative Property of Addition, 126–131
error analysis, 130
Associative Property of Multiplication, 126–131
Commutative Property of Addition, 126–131
real-life application, 129
Commutative Property of Multiplication, 126–131
Distributive Property, 132–141
error analysis, 137, 138
real-life application, 135
writing, 137
Division Property of Equality, 311
Division Property of Inequality, 340
Multiplication Property of Equality, 310
Multiplication Property of Inequality, 340
Multiplication Property of One, 129
Multiplication Property of Zero, 129
Multiplicative Inverse Property, 310
Subtraction Property of Equality, 303
Subtraction Property of Inequality, 334

Pyramid(s)

defined, 356
drawing, 357
net of, 368–371
a square, 370
a triangular, 371

square, 370
surface area of, 368–373
triangular, 371



Quadrant(s), defined, 276

Quartile(s), 414–417
defined, 414



Range, 412–417

defined, 414
interquartile, 414

Rate(s), 204–209

defined, 206
double number line diagrams,
205
equivalent
defined, 206
finding, 207
unit
cost, 207
defined, 206
finding, 206
writing, 208
writing, 206

Ratio(s), 190–195

comparing, 210–215
defined, 192
diagramming, 191, 193
equivalent
defined, 198
error analysis, 202
graphing, 210–215
modeling, 191
rates and, 204–209

Ratio table(s), 196–203

defined, 198
error analysis, 202
graphing, 210–211
writing, 214

Reading

check for reasonableness, 317
coordinate plane, 277
inequalities, 328, 335
opposites, 251
symbols of, 302, 327
translating words to
equations, 297
quartiles, 414

Real-Life Applications

absolute value, 271
algebraic expressions, 114
area
of composite figures, 173
of parallelograms, 155
of trapezoids, 169
of triangles, 161

Commutative Property of
Addition, 129

coordinate plane, 278

decimals

adding, 81
dividing, 96
multiplying, 88
subtracting, 81

Distributive Property, 135

equations

in one variable, 297
solving, 304, 311
in two variables, 318
writing, 297, 304, 317

fractions

multiplying, 57, 58
ordering, 263

greatest common factor, 33

inequalities

graphing, 328
solving, 335, 341

integers, 251

comparing, 257

least common multiple, 39

mean absolute deviation, 421

mixed numbers, dividing, 73

order of operations, 19

percents, 221, 228

finding the whole, 228

perfect square, 13

polygons in the coordinate
plane, 177

whole numbers, division, 6

writing expressions, 121, 129

Reasoning, Throughout. For
example, see:

absolute value, 272
algebraic expressions, 117
area
parallelograms, 153
triangles, 163

coordinate plane, 274, 280

ordered pairs, 281

reflecting points in, 283

data displays

box-and-whisker plots, 465
histograms, 447
shapes of distribution, 455,
457
stem-and-leaf plots, 434, 439,
447, 455

decimals, multiplying, 90

Distributive Property, 138, 139

division, 9

expressions, 122, 123

factoring, 141

fractions

dividing, 67, 68, 69
multiplying, 59
as percents, 223

greatest common factor, 35

integers, 249, 257

comparing, 259

ordering, 258

least common multiple, 41

mixed numbers, dividing, 75

order of operations, 20

outliers, 445

parallelograms, dimensions of,
157

percents, 219, 231

powers, 15

ratios, 195, 203

rectangles, 171

solids, 359

solving

equations, 131, 306

inequalities, 342

statistics, 390, 391, 395

mean, 397, 400, 401, 407, 457

mean absolute deviation, 419,
422, 423, 457

measures of center, 407

mode, 408

outliers, 417

statistical questions, 392

trapezoids, 170, 171

volumes of prisms, 378, 379

Reciprocals, defined, 64

Rectangle(s), perimeter of, 177

Reflecting points in the coordinate
plane, 282–283

Repeated Reasoning, Throughout.

For example, see:

decimals, 91

Distributive Property, 132

integers, 253

measures of variation, 412
perfect squares, 15
ratio tables, 197
solving equations, 301
writing expressions, 118

S

Shape of a distribution, 450–457
box-and-whisker plots, 462
choosing appropriate measures,
456–457
skewed left, 452
skewed right, 452
symmetric, 452

Solid(s)

defined, 356
drawing, 354–355, 357
edges of, 356
faces of, 356
polyhedron(s), 354–359
defined, 356
edges of, 356
faces of, 356
project, 359
research, 559
vertices of, 356

prism(s)

defined, 356
drawing, 357
nets for, 360–363
defined, 362
a rectangular, 362
a triangular, 363
surface area of, 360–365
a rectangular, 362
a triangular, 363
volume of rectangular,
374–379

project, 359, 379

pyramid(s)

defined, 356
drawing, 357
net of, 368–371
a square, 370
a triangular, 371
square, 370
surface area of, 368–373
triangular, 371

research, 359

surface area of
defined, 362

prisms, 360–365

pyramids, 368–373

vertices of, 356
volume of, 374–375

Solution, defined, 302

**Solution of an equation in two
variables**, defined, 316

Solution of an inequality, defined,
327

Solution set, defined, 327

Square(s), perfect,

defined, 13
real-life application, 13

Statistical question(s), 392–395
defined, 392

Statistics, *See also* Data displays
defined, 392

mean, 396–401

defined, 398

modeling, 397

research, 408

mean absolute deviation,
418–423

defined, 420

error analysis, 422

real-life application, 421

measures of center, 396–409

choosing, 456–457

defined, 404

error analysis, 407

research, 408

measures of variation, 412–417

defined, 414

error analysis, 416

writing, 417

median, 402–409

defined, 404

error analysis, 407

research, 408

mode, 402–409

defined, 404

research, 408

modeling, 390

outliers

defined, 399

writing, 407

quartiles, 414–417

defined, 414

first, 414

third, 414

range, 412–417

defined, 414

interquartile, 414

statistical questions, 392–395

defined, 392

Stem, defined, 436

Stem-and-leaf plot(s), 434–439

defined, 436

error analysis, 438

leaf, 436

stem, 436

writing, 438

Structure, *Throughout. For
example, see:*

adding decimals, 83

box-and-whisker plots, 465

coordinate plane, 274

reflecting points in, 283

exponents, 11

factoring expressions, 141

fractions

dividing by, 63

multiplying, 55

greatest common factor, 31

integers, 249

interquartile range, 417

least common multiple, 37

polygons in the coordinate
plane, 175, 179

properties of multiplication, 131

ratio tables, 215

solving equations, 313

surface area of a pyramid, 373

Study Tip

algebraic expressions, 113

base of a triangular pyramid, 371

box-and-whisker plots, 462

check for reasonableness, 4

composite figures, 172

coordinate plane, 278

data displays

box-and-whisker plots, 461,
462

shapes of distribution, 452,
462

decimals

adding, 80

dividing, 95, 96

subtracting, 80

Distributive Property, 135

dot plots, 392

equivalent fractions and
percents, 220

expressions

algebraic, 112

equivalent, 128

factoring, 140

writing, 121

finding the percent of a number, 226

fractions, 66

- adding and subtracting, 43
- multiplying, 56
- simplest form, 42

graphing

- equations in two variables, 317
- ordered pairs from a ratio table, 213

greatest common factor, 32

inverse operations, 334

least common denominators, 66

measures of center, 404

Multiplicative Inverse Property, 64

order of operations, 18

ordering integers, 257

polygons in the coordinate plane, 176, 177

prime factorization, 26, 27

ratio tables, 199, 200

reciprocals, 64

solving

- equations, 303, 304
- inequalities, 334

unit cost, 207

unit rates, 206

variable by itself, 112

variables, 121

volume of a cube, 376

Subtraction

- of decimals, 78–83
 - error analysis, 82
 - real-life application, 81
 - writing, 82
- equations
 - error analysis, 305
 - real-life application, 304
 - solving by, 300–307
- of fractions, 42–43
- inequalities, solving by, 332–337
- of mixed numbers, 43

Property of

- Equality, 303
- Inequality, 334

whole numbers, 4

Subtraction Property of Equality, 303

- real-life application, 304
- writing, 305

Subtraction Property of Inequality, 334

- real-life application, 335

Summary triangle, 266

Surface Area

- of prisms, 360–365
- of pyramids, 368–373
- of a solid, defined, 362

T

Tables

- frequency, 441
- for graphing equations, 317

Tape diagram(s), 191, 193

Term(s)

- coefficient, 112
- constant, 112
- defined, 112
- variable, 112

Third quartile, defined, 414

Three-dimensional figures, *See* Solids

Trapezoid(s)

- area of, 166–171
- error analysis, 170
- formula, 168
- real-life application, 169
- writing, 167

Triangle(s)

- area of, 158–163
- error analysis, 162
- formula, 160
- real-life application, 161
- research, 163
- writing, 163

U

Unit analysis, defined, 234

Unit cost, 207

Unit rate(s), 206–209

- defined, 206
- finding, 206
- unit cost, 207
- writing, 208

U.S. customary system

- converting units, 232–237
- to metric units, 232–237
- defined, 234

V

Variable(s)

- coefficient of, 112
- defined, 112

dependent, 316

equations in one, 294–299

- error analysis, 298
- real-life application, 297

equations in two, 314–321

- defined, 316
- dependent variable, 316
- error analysis, 319
- graphing, 317
- independent variable, 316
- real-life application, 318
- solution of, 316

independent, 316

Venn diagram

defined, 30

for identifying

- factors, 30–31, 37
- multiples, 36

Vertex

of a solid, defined, 356

Volume

defined, 374

of rectangular prisms, 374–379

- formula, 29, 376

W

Which One Doesn't Belong?, *Throughout. For example, see:*

- algebraic expressions, 115
- area, 170
- coordinate plane, 279
- Distributive Property, 137
- equations in two variables, 319
- equivalent ratios, 201
- exponents, 14
- factor pairs, 28
- fractions, 67
- measures of center, 407
- percents, 222
- properties, 130
- ratios, 194
- statistics
 - mean absolute deviation, 422
 - measures of center, 407

Whole number(s)

- adding, 4
- dividing, 4–6
 - a decimal by, 94
- error analysis, 8
- by a fraction, 65
- real-life application, 6

- multiplying, 4
 - by decimals, 86
 - error analysis, 8
- operations, 2–9
 - choosing among, 2–3
 - modeling, 9
- perfect square of, 13
 - defined, 13
 - real-life application, 13
- subtracting, 4
- Word magnet, 448
- Writing, *Throughout. For example, see:*
 - area
 - of a trapezoid, 167
 - of a triangle, 163
 - converting units, 236
 - decimals
 - adding, 82
 - dividing, 93
 - subtracting, 82
 - Distributive Property, 137
 - Division Property of Equality, 312
 - equations, 297
 - in two variables, 314
 - expressions
 - algebraic, 112, 120–121
 - error analysis, 122
 - modeling, 123
 - real-life application, 121
 - fractions, multiplying, 59
 - greatest common factor, 34
 - inequalities, 332, 338
 - graphing, 329
 - integers, 249
 - comparing, 258
 - least common multiples, 40
 - measures of center, 407
 - measures of variation, 417
 - numerical expressions, 20
 - order of operations, 20
 - percents, 222
 - perimeter of a rectangle, 178
 - polygons
 - area of, 156
 - in the coordinate plane, 178
 - rates, 206
 - unit, 208
 - ratio tables, 214
 - ratios, 192, 218
 - solving
 - equations, 305
 - inequalities, 336
 - stem-and-leaf plots, 438