

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, 2–7

- defined, 4
- error analysis, 6
- real-life application, 5

Addition

- of expressions
 - linear, 86–91
 - modeling, 86–87
- of integers, 8–15
 - with different signs, 8–11
 - error analysis, 12
 - with the same sign, 8–11

Property

- of Equality, 98
- of Inequality, 132
- real-life application, 99
- of rational numbers, 50–55
 - error analysis, 54
 - real-life application, 53
 - writing, 54, 55, 65
- to solve inequalities, 130–135

Addition Property of Equality, 98

- real-life application, 99

Addition Property of Inequality, 132

Additive inverse

- defined, 10
- writing, 12

Additive Inverse Property, 10

Adjacent angles

- constructions, 270–275
- defined, 272

Algebra

- equations
 - equivalent, 98
 - graphing linear, 566–567
 - literal, 774
 - modeling, 96–97, 102, 108–109
 - multi-step, 764–767
 - rewriting, 774–777
 - solving, 96–113
 - two-step, 108–113
 - with variables on both sides, 768–773
 - writing, 100, 106, 112

expressions

- linear, 86–91
- modeling, 86–87, 91
- simplifying, 80–85
- writing, 84, 90

formulas, *See* Formulas

linear equations

- graphing, 566–567
- slope of a line, 572–581
- slope-intercept form, 590–607
- standard form, 596–601

properties, *See* Properties

Algebra tiles

- equations, 96–97, 102, 108–109
- expressions, 86–87

Angle(s)

- adjacent
 - constructions, 270–275
 - defined, 272
- alternate exterior, 530
- alternate interior, 530
- classifying, 277–278
 - triangles by, 284

complementary

- constructions, 276–281
- defined, 278

congruent

- defined, 272
- reading, 284

corresponding, 528–529

- defined, 468
- error analysis, 531

exterior

- defined, 529
- error analysis, 539

interior, defined, 529

measures

- of a quadrilateral, 295
- of a triangle, 288–289

naming, 272

- error analysis, 274

of polygons, 542–549

- defined, 536
- error analysis, 547, 548
- reading, 544
- real-life application, 545
- similar, 550–555

of rotation, 486

sums

- for a quadrilateral, 295
- for a triangle, 288–289

supplementary

- constructions, 276–281
- defined, 278

of triangles, 534–539

- exterior, 536
- interior, 536
- real-life application, 537
- similar, 552

vertical

- constructions, 270–275
- defined, 272

Angle of rotation, defined, 486

Area, *See also* Surface area

- of a circle, 332–337
 - formula, 334
- of a composite figure, 338–343

Area of similar figures, 500–505

- formula, 502
- writing, 504

B

Base, defined, 712

Biased sample(s), defined, 442

C

Center, defined, 318

Center of dilation, defined, 508

Center of rotation, defined, 486

Choose Tools, *Throughout. For example, see:*

- angles, 271
- circles and circumference, 321
- graphing linear equations, 567
- indirect measurement, 551
- probability, 406, 426
- scientific notation, 747
- slope, 578

Circle(s)

- area of, 332–337
 - formula, 334
- center of, 318
- circumference and, 316–323
 - defined, 319

- formula, 319
 - research, 323
 - defined, 318
 - diameter of, 318
 - pi, 316, 319
 - semicircle, 320
 - Circumference**
 - and circles, 316–323
 - defined, 319
 - formula, 319
 - research, 323
 - Common Error
 - inequalities, 141
 - percent equations, 234
 - Pythagorean Theorem, 658
 - Quotient of Powers Property, 724
 - scientific notation, 745
 - transformations
 - rotations, 487
 - similar figures, 496
 - Complementary angles**
 - constructing, 276–281
 - defined, 278
 - Complex fraction**, defined, 165
 - Composite figure(s)**
 - area of, 338–343
 - defined, 326
 - perimeters of, 324–329
 - error analysis, 328
 - Compound event(s)**, *See also* Events, Probability
 - defined, 424
 - error analysis, 426
 - writing, 425
 - Concave polygon**, defined, 543
 - Cone(s)
 - volume of, 678–683
 - error analysis, 682
 - formula, 680
 - real-life application, 681
 - writing, 682
 - Congruent angles**
 - defined, 272
 - reading, 284
 - Congruent figures**, 466–467
 - corresponding angles, 468
 - corresponding sides, 468
 - defined, 468
 - error analysis, 471
 - identifying, 468
 - naming parts, 468
 - reading, 468
 - Congruent sides**
 - defined, 284
 - reading, 284
 - Connections to math strands
 - Algebra, 13, 19, 27, 32, 643
 - Geometry, 91, 101, 113, 599, 245, 366, 499, 505, 533, 549, 555, 571, 580, 581, 631, 637, 743
 - Constant of proportionality**, defined, 200
 - Constructions
 - angles
 - adjacent, 270–275
 - vertical, 270–275
 - quadrilaterals, 292–297
 - triangles, 282–289
 - error analysis, 286
 - Convex polygon**, defined, 543
 - Coordinate plane(s)
 - transformations in the
 - dilations, 506–513
 - reflections, 479–483
 - rotations, 485–491
 - translations, 473–477
 - Corresponding angles**
 - defined, 468
 - naming, 468
 - symbol, 468
 - Corresponding sides**
 - defined, 468
 - error analysis, 471
 - naming, 468
 - symbol, 468
 - Critical Thinking, *Throughout. For example, see:*
 - angle measures, 533
 - circles, area of, 337
 - composite figures
 - area of, 343
 - perimeter of, 329
 - cube roots, 637
 - cylinders, 372
 - discounts, 251
 - exponents, 715
 - Product of Powers Property, 720, 721
 - Quotient of Powers Property, 727
 - zero, 732
 - inequalities, 129
 - interest, 257
 - linear equations, 594
 - graphing, 595, 601
 - in slope-intercept form, 595, 607
 - in standard form, 601
 - writing, 607
 - multi-step equations, 767
 - percent
 - of change, 245
 - of decrease, 245
 - of increase, 245
 - prisms, 381
 - probability, 411
 - proportional relationships, 587
 - proportions, 599, 191
 - direct variation, 203
 - pyramids, 366
 - rates, 169
 - rational numbers, 49
 - dividing, 69
 - ratios, 168, 599
 - samples, 444, 445
 - scale drawing, 303
 - scale factor, 304
 - scientific notation, 741, 753
 - similar triangles, 555
 - simplifying expressions, 85
 - slant height, 366
 - slope, 197, 577, 578, 579
 - slope-intercept form, 594
 - solids, 677
 - solving equations, 101, 107
 - square roots, 630
 - surface area, 366, 372, 380
 - transformations
 - congruent figures, 471
 - dilations, 513
 - reflections, 483
 - rotations, 491
 - similar figures, 498, 499
 - triangles, 287
 - volume, 380, 381
 - of cones, 683
 - of cylinders, 677
- Cross products**, defined, 173
- Cross Products Property, 173
- Cross section(s)**
 - defined, 388
 - of three-dimensional figures, 388–389
- Cube(s), surface area of, 358
- Cube root(s)**
 - defined, 634
 - finding, 632–637
 - real-life application, 635

perfect cube, 634
Cylinder(s)
cross section of, 388–389
surface area of, 368–373
error analysis, 372
formula, 370
real-life application, 371
volume of, 672–677
formula, 674
modeling, 677
real-life application, 675

D

Decimal(s)
comparing
fractions with, 220–225
percents with, 220–225
real-life application, 222
ordering
with fractions, 220–225
with percents, 220–225
real-life application, 223
percents as, 214–219
error analysis, 218
modeling, 214–215
real-life application, 217
repeating, 654–655
defined, 46
error analysis, 48
writing, 48
terminating
defined, 46
writing, 48
writing
as fractions, 47
as percents, 215–216
rational numbers as, 46
Dependent events, *See also* Events,
Probability
defined, 431
error analysis, 434
formula, 431
writing, 433
Diameter, defined, 318
Different Words, Same Question,
Throughout. For example,
see:
adding rational numbers, 54
angles of polygons, 547
area of a circle, 336
constructing triangles, 286
direct variation, 202

exponents, 732
inequalities, 128
linear expressions, 90
percent equations, 236
probability, 433
rotations, 489
solving equations, 776
subtracting integers, 18
surface area of a prism, 359
triangles, 642
volume of cylinders, 676

Dilation(s), 506–513

center of, 508
in the coordinate plane, 506–513
defined, 508
error analysis, 512
scale factor, 508

Direct variation, 198–203, *See also*

Proportional relationships
constant of proportionality, 200
defined, 200
error analysis, 202
modeling, 203
real-life application, 201
writing, 202

Discount(s), 246–251

defined, 248
writing, 250

Distance formula, 657–661

defined, 658
error analysis, 660
real-life application, 659

Distributive Property

equations with variables on both
sides, 768
multi-step equations, 765

Division

equations
modeling, 102
real-life application, 105
solving by, 102–107
of integers, 28–33
with different signs, 28–30
error analysis, 32
reading, 32
real-life application, 31
with the same sign, 28–30
writing, 32

Property

of Equality, 104
of Inequality, 140–141

real-life application, 105
of rational numbers, 64–69
error analysis, 68
real-life application, 67
writing, 65, 68
to solve inequalities, 138–145
Division Property of Equality, 104
Division Property of Inequality,
140–141
error analysis, 144

E

Equality

Addition Property of, 98
Division Property of, 104
Multiplication Property of, 104
Subtraction Property of, 98
Equation(s), *See also* Linear
equations
addition, 96–101
error analysis, 100
modeling, 96–97
writing, 100
division, 102–107
modeling, 102
real-life application, 105
equivalent, 98
literal, 774
multiplication, 102–107
error analysis, 106
writing, 106
multi-step, 764–767
error analysis, 766
real-life application, 765
percent, 232–237
error analysis, 236
real-life application, 235
percent proportions, 226–231
error analysis, 230
real-life application, 229
writing, 230
rewriting, 774–777
error analysis, 776
real-life application, 775
solving
multi-step, 764–767
by rewriting, 774–777
two-step, 764
with variables on both sides,
768–773
with variables on both sides,
768–773

- error analysis, 771, 772
- real-life application, 770
- writing, 771
- subtraction, 96–101
 - modeling, 96–97
 - real-life application, 99
- two-step
 - error analysis, 112
 - modeling, 108–109
 - real-life application, 111
 - solving, 108–113
 - writing, 112, 113
- Equivalent equations**
 - defined, 98
 - writing, 100
- Error Analysis, *Throughout. For example, see:*
 - absolute value, 6
 - angles
 - corresponding, 531
 - exterior, 539
 - of polygons, 547, 548
 - classifying triangles, 286
 - congruent figures, 471
 - corresponding sides, 471
 - decimals, as percents, 218
 - direct variation, 202
 - distance formula, 660
 - equations
 - multi-step, 766
 - rewriting, 776
 - solving, 100, 106
 - two-step, 112
 - with variables on both sides, 771, 772
 - exponents
 - evaluating expressions, 714
 - negative, 732
 - expressions
 - like terms of, 84
 - linear, 91
 - inequalities
 - solving, 134, 143, 144, 150
 - writing, 128
 - integers
 - adding, 12
 - dividing, 32
 - multiplying, 26
 - subtracting, 18
 - linear equations
 - graphing, 570
 - in slope-intercept form, 594, 606
 - in standard form, 600
 - naming angles, 274
 - outcomes, 404
 - parallel lines, 531
 - percent
 - equations, 236
 - of increase, 244
 - proportions, 230
 - perimeter of a composite figure, 328
 - powers
 - Product of Powers Property, 720
 - Quotient of Powers Property, 726
 - prisms
 - surface area, 360
 - volume of, 380
 - probability, 410
 - dependent events, 434
 - Fundamental Counting Principle, 426
 - outcomes, 404
 - proportions
 - direct variation, 202
 - percent, 230
 - solving, 190
 - writing, 182
 - Pythagorean Theorem, 642, 660
 - rational numbers
 - adding, 54
 - decimal representation of, 48
 - dividing, 68
 - multiplying, 68
 - subtracting, 62
 - scale drawings, 303
 - scientific notation
 - operations in, 752
 - writing numbers in, 746
 - writing in standard form, 740
 - simple interest, 256
 - slope, 196, 578
 - square roots, 651
 - finding, 630
 - surface area
 - of a cylinder, 372
 - of a prism, 360
 - transformations
 - dilations, 512
 - triangles
 - exterior angles of, 539
 - Pythagorean Theorem, 642
 - volume
 - of cones, 682
 - of a prism, 380
 - of similar solids, 698
- Event(s)**, *See also* Probability
 - compound, 420–427
 - defined, 424
 - defined, 402
 - dependent, 428–435
 - defined, 431
 - error analysis, 434
 - writing, 433
 - independent, 428–435
 - defined, 430
 - writing, 433
 - outcomes of, 402
 - probability of, 406–411
 - defined, 408
 - error analysis, 410
- Example and non-example chart, 290, 540
- Experiment(s)**
 - defined, 402
 - outcomes of, 400–405
 - project, 453
 - reading, 402
 - simulations, 436–437
 - defined, 436
- Experimental probability**, 412–419
 - defined, 414
 - formula, 414
- Exponent(s)**
 - defined, 712
 - evaluating expressions, 710–715
 - error analysis, 714
 - real-life application, 713
 - negative, 728–733
 - defined, 730
 - error analysis, 732
 - real-life application, 731
 - writing, 732
 - powers and, 710–721
 - error analysis, 720, 726
 - real-life application, 725
 - writing, 726
 - properties of
 - Power of a Power Property, 718
 - Power of a Product Property, 718
 - Product of Powers Property, 716–721

Quotient of Powers Property, 722–727

quotients and, 722–727

scientific notation
 defined, 738
 error analysis, 740, 746, 752
 operations in, 748–753
 project, 753
 reading numbers in, 736–741
 real-life applications, 739, 745, 751
 writing numbers in, 742–747

zero, 728–733
 defined, 730

Expression(s)
 algebraic
 error analysis, 84
 like terms, 82
 modeling, 85
 real-life application, 83
 simplest form of, 82
 simplifying, 80–85
 writing, 84

evaluating exponential, 710–715
 error analysis, 714
 real-life application, 713

factoring, 92–93
 defined, 92

linear
 adding, 86–91
 defined, 88
 error analysis, 91
 modeling, 86–87, 91
 real-life application, 89
 subtracting, 86–91
 writing, 90

Exterior angle(s)
 alternate, 530
 angle sum of, 546
 real-life application, 545
 defined, 529, 536
 of triangles, 534–539
 error analysis, 539

Exterior angles of a polygon,
 defined, 536

F

Factoring an expression, 92–93
 defined, 92

Favorable outcome(s), defined, 402

Formula(s)
 angles
 sum for a quadrilateral, 295

sum for a triangle, 288

area
 of a circle, 334
 of a parallelogram, 341
 of a rectangle, 341
 of a semicircle, 341
 of similar figures, 502
 of a triangle, 341

circumference, 319

distance, 658

pi, 316

perimeter of similar figures, 502

probability
 dependent events, 431
 of an event, 408
 experimental, 414
 independent events, 430
 relative frequency, 412
 theoretical, 415

Pythagorean Theorem, 640

rewriting, 774–777

slope, 572, 574

surface area
 of a cube, 358
 of a cylinder, 370
 of a prism, 357
 of a pyramid, 364
 of a rectangular prism, 356
 of similar solids, 695

temperature conversion, 775

volume
 of a cone, 680
 of a cube, 378
 of a cylinder, 674
 of a hemisphere, 689
 of a prism, 378
 of a pyramid, 384
 of similar solids, 696
 of a sphere, 688

Formula triangle, 684

Four square, 94, 644

Fraction(s)
 comparing
 decimals with, 220–225
 percents with, 220–225
 real-life application, 222

complex, defined, 165

decimals as
 error analysis, 48
 writing, 47

ordering
 with decimals, 220–225
 with percents, 220–225

real-life application, 223

repeating decimals written as,
 654–655

Fundamental Counting Principle

defined, 422
 error analysis, 426
 writing, 425

G

Geometry
 angles, 526–539, 542–555
 adjacent, 270–275
 complementary, 276–281
 congruent, 272
 constructing, 270–281
 corresponding, 468
 error analysis, 274
 exterior, 529, 536
 interior, 529, 536
 of polygons, 542–549
 of rotation, 486
 supplementary, 276–281
 vertical, 270–275

area of similar figures, 500–505

circles
 area of, 332–337
 center of, 318
 circumference, 316–323
 diameter, 318
 radius, 318
 semicircles, 320

composite figures
 area of, 338–343
 perimeter of, 324–329

constructions and drawings,
 270–289, 292–305

line of reflection, 480

parallel lines, 526–533

perimeter of similar figures,
 500–505

pi, 316

polygons
 angles of, 542–549
 concave, 543
 convex, 543

Pythagorean Theorem, 638–643
 converse of, 658
 defined, 640
 using, 656–661

quadrilaterals, 294
 constructing, 292–297
 defined, 292

kite, 294
 parallelogram, 294, 341
 rectangle, 294, 341
 rhombus, 294
 square, 294
 trapezoid, 294
 sides, corresponding, 468
 solids
 cones, 678–683
 cylinders, 672–677
 similar, 692–699
 spheres, 686–691
 surface area of, 692–699
 volume of, 672–683, 686–699, 692–699
 surface area
 of a cylinder, 368–373
 of a prism, 354–361
 of a pyramid, 362–367
 of a rectangular prism, 356
 tessellation, 472–473
 transformations
 congruent figures, 466–467
 dilations, 506–513
 reflections, 478–483
 rotations, 484–491
 similar figures, 494–505
 translations, 48–53
 transversals, 526–533
 trapezoids, 294
 triangles
 angles of, 534–539
 area of, 341
 classifying, 284
 congruent, 466–468
 congruent sides, 284
 constructing, 282–287
 hypotenuse, 640
 legs, 640
 right, 640
 similar, 550–555
 volume of a prism, 376–381
Graph of an inequality, defined, 127
 Graphic Organizers
 example and non-example chart, 290, 540
 formula triangle, 684
 four square, 94, 644
 idea and examples chart, 20
 information frame, 374
 information wheel, 184, 434
 notetaking organizer, 438

 process diagram, 56, 588
 summary triangle, 238, 492
 word magnet, 330
 Y chart, 136
Graphing
 inequalities, 124–129
 defined, 127
 proportional relationships, 176–177
Graphs
 linear, 566–571
 defined, 568
 error analysis, 570
 of horizontal lines, 568
 real-life application, 569
 in slope-intercept form, 590–595
 solution of, 568
 in standard form, 596–601
 of vertical lines, 568
 proportional relationships, 582–587
 slope, 572–581
 defined, 572, 574
 error analysis, 578
 formula, 572, 574
 reading, 574



Hemisphere(s)

defined, 689
 volume formula, 689

Hypotenuse, defined, 640



Idea and examples chart, 20

Image(s)

defined, 474
 reading, 474

Independent events, *See also* Events, Probability

defined, 430
 formula, 430
 writing, 433

Indirect measurement, 551–553

defined, 553
 modeling, 551
 project, 551

Inequality

Addition Property of, 132
 defined, 126
 Division Property of, 140–141

graphing, 124–129
 defined, 127
 Multiplication Property of, 140–141
 solution of
 defined, 126
 reading, 133
 solution set of
 defined, 126
 solving two-step, 146–151
 error analysis, 150
 real-life application, 149
 writing, 150
 solving using addition, 130–135
 error analysis, 134
 real-life application, 133
 writing, 130
 solving using division, 138–145
 error analysis, 144
 project, 145
 writing, 139
 solving using multiplication, 138–145
 error analysis, 143
 project, 145
 writing, 139, 143
 solving using subtraction, 130–135
 error analysis, 134
 writing, 130
 Subtraction Property of, 132
 symbols, 126
 reading, 133
 writing, 124–129
 error analysis, 128
 modeling, 129
 Information frame, 374
 Information wheel, 184, 734
Integer(s)
 absolute value of, 2–7
 error analysis, 6
 real-life application, 5
 adding, 8–15
 with different signs, 8–11
 error analysis, 12
 with the same sign, 8–11
 additive inverse of, 10
 writing, 12
 defined, 4
 dividing, 28–33
 with different signs, 28–30
 error analysis, 32
 reading, 32

real-life application, 31
 with the same sign, 28–30
 writing, 32
 multiplying, 22–27
 with different signs, 22–24
 error analysis, 26
 modeling, 27
 real-life application, 25
 with the same sign, 22–24
 writing, 26
 subtracting, 14–19
 error analysis, 18
 real-life application, 17
 writing, 18
Interior angle(s)
 alternate, 530
 defined, 529, 536
 of triangles, 534–539
 real-life application, 537
Interior angles of a polygon,
 defined, 536
Interest
 defined, 254
 principal, 254
 simple, 252–257
 defined, 254
 error analysis, 256
 writing, 256
Irrational number(s), defined, 648

K

Kite, defined, 294

L

Lateral surface area, defined, 358
Leg(s), defined, 640
Like terms
 combining to solve equations,
 764
 defined, 82
 error analysis, 84
 writing, 84
Line(s)
 graphing
 horizontal, 568
 vertical, 568
 parallel, 526–533
 defined, 528
 error analysis, 531
 project, 532
 slope of, 580
 symbol, 528

perpendicular
 defined, 528
 slope of, 581
 symbol, 528
 of reflection, 56
 slope of, 572–581
 transversals, 526–533
 x -intercept of, 592
 y -intercept of, 592
Line of reflection, defined, 480
Linear equation(s), *See also*
 Equations, Proportional
 relationships
 defined, 568
 graphing, 566–571
 error analysis, 570
 horizontal lines, 568
 real-life applications, 569, 599
 in slope-intercept form,
 590–595
 in standard form, 596–601
 vertical lines, 568
 point-slope form
 defined, 610
 real-life application, 611
 writing, 612
 writing in, 608–613
 slope of a line, 572–581
 defined, 572, 574
 error analysis, 578
 formula, 572, 574
 reading, 574
 slope-intercept form
 defined, 592
 error analysis, 594, 606
 real-life applications, 593, 605
 writing in, 593–607
 x -intercept, 592
 y -intercept, 592
 solution of, 568
 standard form, 596–601
 defined, 598
 error analysis, 600
 modeling, 601
 real-life application, 599
 writing, 600
Linear expression(s)
 adding, 86–91
 modeling, 86–87, 91
 writing, 90
 factoring, 92–93
 subtracting, 86–91
 error analysis, 91

modeling, 87
 real-life application, 89
 writing, 90

Literal equation(s), defined, 774
 Logic, *Throughout.* *For example,*
 see:
 absolute value, 3
 angles, 281
 interior, 534
 measures, 532
 circles, 323
 circumference, 323
 constructing a triangle, 287
 cube roots, 637
 inequalities
 solving, 145
 writing, 129
 linear equations
 graphing, 566, 601
 in slope-intercept form, 591
 linear expression, 91
 percent equations, 237
 prisms, 381
 probability
 dependent events, 434
 experimental, 417
 independent events, 434
 theoretical, 417
 rewriting equations, 777
 samples, 445
 transformations
 similar figures, 499

M

Markup(s), 246–251
 defined, 248
 writing, 250
Meaning of a Word
 adjacent, 270
 dilate, 506
 opposite, 10
 proportional, 170
 rate, 162
 rational, 44
 reflection, 478
 rotate, 484
 translate, 472
 transverse, 526
Mental Math, Throughout. *For*
 example, see:
 integers
 adding, 13
 subtracting, 19

proportions, 181
 rotations, 489
 Modeling, *Throughout*. For
example, see:
 decimals as percents, 214–215
 direct variation, 203
 expressions
 algebraic, 85
 linear, 86–87, 91
 indirect measurement, 551
 inequalities, 129
 linear equations
 in standard form, 601
 multiplying integers, 27
 percents as decimals, 214–215
 probability, 418
 Pythagorean Theorem, 638
 scale models, 305
 solutions of equations, 96–97,
 102
 volume of a cylinder, 677
 Multiplication
 equations, solving by, 102–107
 inequalities, solving by, 138–145
 of integers, 22–27
 with different signs, 22–24
 error analysis, 26
 modeling, 27
 real-life application, 25
 with the same sign, 22–24
 writing, 26
 Property
 of Equality, 104
 of Inequality, 140–141
 of rational numbers, 64–69
 error analysis, 68
 writing, 65, 68
 Multiplication Property of Equality,
 104
 Multiplication Property of
 Inequality, 140–141
 error analysis, 143

N

Notetaking organizer, 438
 Number(s)
 irrational, 648–653
 defined, 648
 rational, 648
 real, 648–653
 classifying, 648
 defined, 648

Number Sense, *Throughout*. For
example, see:
 adding rational numbers, 55
 angles
 exterior, 538
 of a polygon, 547
 cube roots, 637
 exponents, 714, 727, 732
 fractions
 comparing percents with, 224
 ordering percents and, 225
 inequalities, 135, 145
 integers
 adding, 12
 dividing, 33
 multiplying, 27
 percents
 comparing fractions with, 224
 of increase, 244
 ordering fractions and, 225
 proportions, 230
 probability, 418
 proportions, 190, 230
 real numbers, 653
 reciprocals, 68
 scientific notation, 741, 752
 similar solids
 surface area of, 697
 volume of, 697
 slope, 197
 solving equations, 107
 square roots, 630
 statistics, 453
 surface area of a prism, 361
 transformations
 reflections, 483
 similar figures, 504

O

Open-Ended, *Throughout*. For
example, see:
 absolute value, 7
 angles, 275, 281
 area of a composite figure, 342
 composite figures, 328
 dilations, 513
 equations
 linear, 594
 multi-step, 766
 with variables on both sides,
 771, 772
 exponents, 733

inequalities, 143, 150
 integers, 7
 adding, 13
 dividing, 32
 multiplying, 26
 opposite, 18
 subtracting, 19
 inverse operations, 106
 parallel lines, 531
 percents as decimals, 218
 probability, 410
 compound events, 425
 theoretical, 417
 proportions
 solving, 190
 writing, 174, 182
 rates, 167
 rational numbers
 adding, 54
 decimal representation of, 49
 multiplying, 69
 subtracting, 63
 ratios, 174
 scale factor, 304
 similar solids, 697
 similar triangles, 555
 slope, 577
 solving equations, 107
 square roots, 653
 surface area of a prism, 360
 volume
 of a prism, 381
 of a pyramid, 386, 387

Opposites, defined, 10

Outcomes, *See also* Events,
 Probability
 counting, 403
 error analysis, 404
 defined, 402
 experiment, 402
 favorable, 402
 reading, 402
 writing, 404

P

Parallel line(s)
 defined, 528
 slope of, 580
 symbol, 528
 and transversals, 526–533
 error analysis, 531
 project, 532

- Parallelogram(s)
 - area of, 341
 - defined, 294
- Patterns, *Throughout. For example, see:*
 - dividing integers, 33
- Percent(s)
 - of change, 242
 - comparing
 - decimals with, 220–225
 - fractions with, 220–225
 - real-life application, 222
 - as decimals, 214–219
 - error analysis, 218
 - modeling, 214–216
 - real-life application, 217
 - of decrease, 240–245
 - equation, 232–237
 - error analysis, 236
 - real-life application, 235
 - error, 243
 - of increase, 240–245
 - ordering
 - with decimals, 220–225
 - with fractions, 220–225
 - real-life application, 223
 - proportions, 226–231
 - error analysis, 230
 - real-life application, 229
 - writing, 230
 - research, 219
- Percent of change**
 - defined, 242
 - formula, 242
- Percent of decrease**
 - defined, 242
 - formula, 242
 - writing, 244
- Percent error**
 - defined, 243
 - formula, 243
- Percent of increase**
 - defined, 242
 - error analysis, 244
 - formula, 242
- Perfect cube**, defined, 634
- Perfect square**, defined, 628
- Perimeter(s)
 - of composite figures, 324–329
 - error analysis, 328
 - of similar figures, 500–505
 - formula, 502
 - writing, 504
- Perpendicular line(s)
 - defined, 528
 - slope of, 581
 - symbol, 528
- Pi**
 - defined, 319
 - formula, 316
- Point-slope form**
 - defined, 610
 - writing equations in, 608–613
 - real-life application, 611
 - writing, 612
- Polygon(s)
 - angles, 542–549
 - error analysis, 547, 548
 - exterior, 536
 - interior, 536
 - measures of interior, 544
 - real-life application, 545
 - sum of exterior, 546
 - concave, 543
 - convex, 543
 - defined, 544
 - kite, 294
 - parallelogram, 294
 - quadrilateral, 292–297
 - reading, 544
 - rectangle, 294, 341
 - regular, 545
 - rhombus, 294
 - square, 294
 - trapezoid, 294
 - triangle(s), 282–289, 534–539
 - error analysis, 539
 - modeling, 551
 - project, 551
 - similar, 550–555
 - writing, 554
- Population(s)**, 440–453
 - comparing, 448–453
 - project, 453
 - writing, 452
 - defined, 440
 - research, 441
 - samples, 440–447
 - biased, 442
 - defined, 440
 - unbiased, 442
- Power(s)**, *See also* Exponents
 - base of, 712
 - defined, 712
 - exponent of, 712
 - of a power, 718
 - of a product, 718
 - product of, 716–721
 - error analysis, 720
 - Product of Powers Property, 718
 - quotient of, 722–727
 - error analysis, 726
 - Quotient of Powers Property, 724
 - real-life application, 725
 - writing, 726
 - scientific notation
 - defined, 738
 - error analysis, 740, 746, 752
 - operations in, 748–753
 - project, 753
 - reading numbers in, 736–741
 - real-life applications, 739, 745, 751
 - writing numbers in, 742–747
- Power of a Power Property, 718
- Power of a Product Property, 718
- Precision, *Throughout. For example, see:*
 - angles of a triangle, 539
 - constructing angles, 275, 281
 - equations with variables on both sides, 772, 773
 - exponents, 733
 - indirect measurement, 551
 - inequalities
 - graphing, 128
 - solving, 143
 - linear equations
 - graphing, 566, 570
 - in slope-intercept form, 606
 - ordering fractions, decimals, and percents, 225
 - outcomes, 405
 - percents
 - of change, 245
 - prisms, 381
 - Product of Powers Property, 720
 - Pythagorean Theorem, 643
 - rates, 169
 - rational numbers
 - dividing, 69
 - multiplying, 65
 - similar solids, 699
 - square roots, 631
 - transformations
 - rotations, 485
 - translations, 473

- Prices
 discounts and markups, 246–251
 defined, 248
 writing, 250
- Principal**, defined, 254
- Prism(s)
 cross section of, 388
 surface area of, 354–361
 error analysis, 360
 formula, 357
 real-life application, 358
 rectangular, 356
 writing, 359
 volume of, 376–381
 error analysis, 380
 formula, 378
 real-life application, 379
 rectangular, 376
 writing, 386
- Probability**, 406–419
 defined, 408
 error analysis, 410
 events, 400–405
 compound, 420–427
 dependent, 428–435
 error analysis, 434
 independent, 428–435
 writing, 433
 of events
 defined, 408
 formula for, 408
 experimental, 412–419
 defined, 414
 formula, 414
 experiments
 defined, 402
 reading, 402
 simulations, 436–437
 Fundamental Counting
 Principle, 422
 error analysis, 426
 outcomes, 400–405
 defined, 402
 error analysis, 404
 favorable, 402
 reading, 402
 writing, 404
 project, 419
 research, 427
 sample space, 422
 theoretical, 412–419
 defined, 415
 formula, 415
 modeling, 418
 writing, 425
- Problem Solving, *Throughout. For example, see:*
 adding integers, 13
 angles, 281
 angles of a polygon, 548
 area and perimeter, 505
 circumference, 323
 decimals as percents, 219
 equations, two-step, 113
 equations with variables on both sides, 773
 inequalities, two-step, 151
 linear equations
 graphing, 571
 in point-slope form, 613
 percent proportions, 231
 probability, 427, 435
 proportions, 191
 proportional relationships, 587
 Pythagorean Theorem, 639
 rational numbers, 49
 simple interest, 257
 solids, 677
 surface area, 367
 transformations
 dilations, 513
 translations, 477
 volume, 387
 of a cylinder, 677
- Process diagram, 56, 588
- Product of Powers Property, 716–721
 defined, 718
 error analysis, 720
- Properties
 Addition Property of Equality, 98
 real-life application, 99
 Addition Property of Inequality, 132
 Additive Inverse Property, 10
 Cross Products Property, 173
 Division Property of Equality, 104
 Division Property of Inequality, 140–141
 error analysis, 144
 Multiplication Property of Equality, 104
 Multiplication Property of Inequality, 140–141
 error analysis, 143
- Power of a Power Property, 718
 Power of a Product Property, 718
 Product of Powers Property, 716–721
 Quotient of Powers Property, 722–727
 Subtraction Property of Equality, 98
 Subtraction Property of Inequality, 132
 real-life application, 133
- Proportion(s)**, 170–599
 cross products, 173
 Cross Products Property, 173
 defined, 173
 percent, 226–231
 error analysis, 230
 real-life application, 229
 writing, 230
 scale and, 300
 similar figures, 494–505
 solving, 186–191
 error analysis, 190
 real-life application, 189
 writing, 190
 writing, 178–183
 error analysis, 182
- Proportional**
 defined, 172
 relationship
 constant of proportionality, 200
 direct variation, 198–203, 160
 error analysis, 202
 graphing, 176–177, 582–587
 modeling, 203
 reading, 172
 real-life application, 201
 writing, 202
- Pyramid(s)
 cross section of, 388
 regular, 364
 slant height, 364
 surface area of, 362–367
 formula, 364
 real-life application, 365
 volume of, 382–387
 formula, 384
 real-life application, 385
 writing, 386
- Pythagorean Theorem**, 638–643
 converse of, 658
 defined, 640

error analysis, 642
modeling, 638
project, 643
real-life applications, 638, 659
using, 656–661
 distance formula, 658
 error analysis, 660
 writing, 660

Q

Quadrilateral(s), 292–297
 classifying, 294
 constructions, 292–297
 reading, 294
 defined, 292
 kite, 294
 parallelogram, 294, 341
 rectangle, 294, 341
 rhombus, 294
 square, 294
 sum of angle measures, 295
 trapezoid, 294
Quotient of Powers Property,
 722–727
 defined, 724
 error analysis, 726
 real-life application, 725
 writing, 726

R

Radical sign, defined, 628
Radicand, defined, 628
Radius, defined, 318
Rate(s)
 defined, 164
 ratios and, 162–169
 research, 169
 unit rate
 defined, 164
 writing, 167
Ratio(s), *See also* Proportions,
 Rates
 complex fraction, 165
 defined, 164
 proportions and, 170–189
 cross products, 173
 Cross Products Property, 173
 error analysis, 182, 190
 proportional, 172
 real-life application, 189
 solving, 186–191
 writing, 178–183

rates and, 162–169
 complex fractions, 165
 writing, 167
scale and, 300
similar figures
 areas of, 502
 perimeters of, 502
slope, 192–197
 error analysis, 196

Rational number(s), *See also*

 Fractions, Decimals
adding, 50–55
 error analysis, 54
 real-life application, 53
 writing, 54, 55, 65
defined, 44, 46, 648
dividing, 64–69
 error analysis, 68
 real-life application, 67
 writing, 65, 68
multiplying, 64–69
 error analysis, 68
 writing, 65, 68
ordering, 47
repeating decimals
 defined, 46
 error analysis, 48
 writing, 46
subtracting, 58–63
 error analysis, 62
 real-life application, 61
 writing, 62
terminating decimals
 defined, 46
 writing, 46
writing as decimals, 46
Reading
 congruent angles, 284
 congruent sides, 284
 experiments, 402
 images, 474
 inequalities
 solving, 133
 symbols of, 126
 outcomes, 402
 polygons, 544
 proportional relationship, 172
 quadrilaterals, 294
 slope, 574
 symbol
 congruent, 466
 prime, 474
 similar, 496

Real number(s), 648–653
 classifying, 648
 defined, 648
 error analysis, 651
Real-Life Applications, *Throughout*.
 For example, see:
 absolute value, 5
 angles of triangles, 537
 cube roots, 635
 decimals, 217, 222, 223
 direct variation, 201
 distance formula, 659
 equations
 multi-step, 765
 rewriting, 775
 with variables on both sides,
 770
 exponents
 evaluating expressions, 713
 negative, 731
 Quotient of Powers Property,
 725
 expressions
 linear, 89
 simplifying, 83
 fractions, 217, 222, 223
 integers
 dividing, 31
 multiplying, 25
 subtracting, 17
 interior angles of a polygon, 545
 linear equations
 graphing, 569
 in point-slope form, 611
 in slope-intercept form, 593,
 605
 in standard form, 599
 writing, 605
 percent, 217, 222, 223
 equations, 235
 proportions, 229
 proportions, 189, 229
 Pythagorean Theorem, 638, 659
 rational numbers
 adding, 53
 dividing, 67
 subtracting, 61
 scientific notation
 operations in, 751
 reading numbers in, 739
 writing numbers in, 745
 similar figures, 497
 solving equations, 99, 105, 111

- solving inequalities, 133, 149
 - square roots
 - approximating, 650
 - finding, 629
 - surface area
 - of a cone, 681
 - of a cylinder, 371, 675
 - of a prism, 358
 - of a pyramid, 365
 - volume
 - of a prism, 379
 - of a pyramid, 385
 - Reasoning, *Throughout. For example, see:*
 - absolute value, 7
 - angle measures, 532, 539, 548
 - angles
 - adjacent, 280
 - complementary, 280, 281
 - congruent, 275
 - constructing, 275
 - supplementary, 280, 281
 - circles, 322
 - circumference, 322
 - composite figures
 - area of, 342
 - perimeter of, 328
 - cones, 389
 - congruent figures, 471
 - cross sections
 - of a cone, 389
 - of a prism, 388
 - cube roots, 633, 636
 - direct variation, 203
 - distance formula, 661
 - exponents, 733
 - expressions
 - linear, 91
 - simplifying, 81, 84, 85
 - exterior angles of polygons, 548
 - indirect measurement, 554
 - inequalities, 128
 - solving, 134, 135, 151
 - integers
 - multiplying, 27
 - subtracting, 19
 - linear equations
 - in point-slope form, 613
 - in slope-intercept form, 595
 - markups, 250
 - percents
 - discount and markups, 250
 - equations, 236
 - of increase, 245
 - proportions, 231
 - perfect squares, 631
 - probability, 410
 - experimental, 417, 419
 - simulations, 437
 - theoretical, 419
 - Product of Powers Property, 720
 - proportional relationships, 586, 587
 - proportions
 - proportional relationships, 177, 203
 - solving, 191
 - writing, 183
 - Pythagorean Theorem, 661
 - quadrilaterals, 293, 296
 - rational numbers
 - adding, 55
 - subtracting, 63
 - rewriting equations, 777
 - scale factor, 303
 - scale models, 304
 - scientific notation
 - operations in, 748
 - reading numbers in, 741
 - writing numbers in, 746, 747
 - simple interest, 256, 257
 - slope, 196, 577, 579
 - solving equations, 107, 113
 - square roots, 630
 - statistics
 - comparing populations, 452
 - samples, 445, 447
 - surface area, 367
 - of a cylinder, 373
 - of a prism, 355
 - of a pyramid, 363
 - transformations
 - congruent figures, 483
 - dilations, 511, 513
 - reflections, 482, 483
 - rotations, 491
 - similar figures, 499, 505
 - translations, 477
 - triangles
 - angle measures of, 289
 - constructions, 283
 - exterior angles of, 539
 - similar, 550, 554, 555
 - volume
 - of a cone, 682, 683
 - of a cylinder, 338, 691
 - of a prism, 387
 - of a pyramid, 386, 387
 - of a sphere, 691
 - Rectangle(s)
 - area of, formula, 341
 - defined, 294
 - Reflection(s)**, 478–483
 - in the coordinate plane, 479–483
 - defined, 480
 - line of, 480
 - writing, 545
 - Regular polygon(s)**, defined, 545
 - Regular pyramid**, defined, 364
 - Relative frequency**, *See also* Probability
 - defined, 412
 - formula, 412
 - Repeated Reasoning, *Throughout. For example, see:*
 - adding rational numbers, 55
 - circles
 - area, 337
 - circumference, 337
 - cube roots, 652
 - cylinders, 373
 - equations, 777
 - exponents, 710
 - negative, 729
 - zero, 728
 - polygons
 - angles of, 535, 542, 543
 - probability, 427
 - repeating decimals, 654, 655
 - similar solids
 - surface area of, 693
 - volume of, 693, 699
 - slope, 193, 573
 - solving equations, 109
 - surface area, 373
- Repeating decimal(s)**
 - defined, 46
 - error analysis, 48
 - writing, 48
 - writing as fractions, 654–655
- Rhombus, defined, 294
- Rise**, defined, 574
- Rotation(s)**, 484–491
 - angle of, 486
 - center of, 486
 - in the coordinate plane, 485–491
 - defined, 486
 - rotational symmetry, 490
- Run**, defined, 574

S**Sample(s)**, 440–447

- biased, 442
- defined, 440
- research, 441
- unbiased, 442

Sample space, defined, 422**Scale**

- defined, 300
- research, 299

Scale drawing, 298–305

- defined, 300
- error analysis, 303
- research, 299
- scale, 300
- scale factor, 301

Scale factor

- defined, 301, 508
- finding, 301

Scale model

- defined, 300
- finding distance in, 301
- modeling, 305

Semicircle(s)

- area of, 341
- defined, 320

Scientific notation

- defined, 738
- operations in, 748–753
 - error analysis, 752
 - real-life application, 751
 - writing, 752
- project, 753
- reading numbers in, 736–741
 - real-life application, 739
 - writing, 740
- writing numbers in, 742–747
 - error analysis, 740, 746
 - real-life application, 745
 - standard form, 738–739
 - writing, 746

Side(s)

- classifying triangles by, 284
- congruent, 284
 - defined, 284
 - reading, 284
- corresponding, defined, 44

Similar figures, 494–505

- areas of, 500–505
 - formula, 502
 - writing, 504

- defined, 496
- perimeters of, 500–505
 - formula, 502
 - writing, 504
- reading, 496
- real-life application, 497

Similar solids

- defined, 356
- surface area of, 692–699
 - linear measures, 695
- volume of, 692–699
 - error analysis, 698
 - formula, 696

Simple interest, 252–257

- defined, 254
- error analysis, 256
- writing, 256

Simplest form, defined, 82**Simulation(s)**, 436–437

- defined, 436

Slant height, defined, 364

- Slope**, 192–197, 572–581
 - defined, 194, 572, 574
 - error analysis, 196, 578
 - formula, 572, 574
 - negative, 576
 - and parallel lines, 580
 - and perpendicular lines, 581
 - positive, 576
 - project, 578
 - reading, 574
 - rise, 574
 - run, 574
 - undefined, 576
 - zero, 576

Slope-intercept form, 590–595

- defined, 592
- graphing equations in, 590–595
 - error analysis, 594
 - real-life application, 593
- writing equations in, 593–607
 - error analysis, 606
 - real-life application, 605
 - writing, 606
- x -intercept, 592
- y -intercept, 592

Solids, *See also*: Surface area,
Three-dimensional figures,
Volume

- cone
 - real-life application, 681
 - volume of, 678–683
 - writing, 682

- cross section, 388–389
- cube, 358
- cylinder, 368–373
 - modeling, 677
 - real-life application, 675
 - volume of, 672–677
- hemisphere, 689
 - volume of, 689
- prism, 354–361, 376–381
- pyramid, 362–367, 382–387
- similar
 - defined, 694
 - error analysis, 698
 - linear measures, 695
 - volume of, 692–699
- sphere
 - volume of, 686–691
- surface area of, 692–699
 - formula, 695
 - volume of, 672–683, 686–699
 - error analysis, 682
 - real-life applications, 675, 681

Solution of an inequality, defined, 126**Solution of a linear equation**, defined, 568**Solution set**, defined, 126**Sphere(s)**

- defined, 686
- volume of, 686–691
 - formula, 688

Square, defined, 294**Square root(s)**

- approximating, 646–653
 - real-life application, 650
 - writing, 652
- defined, 628
- error analysis, 651
- finding, 626–631
 - error analysis, 630
 - real-life application, 629
- perfect square, 628
- radical sign, 628
- radicand, 628

Standard form of a linear equation

- defined, 598
- graphing equations in, 596–601
 - error analysis, 600
 - modeling, 601
 - real-life application, 599
 - writing, 600

- Standard form of a number
 - scientific notation and, 738–739
- Statistics, *See also* Probability
 - populations, 440–453
 - comparing, 448–453
 - defined, 440
 - project, 453
 - research, 441
 - writing, 452
 - samples, 440–447
 - biased, 442
 - defined, 440
 - research, 441
 - unbiased, 442
- Structure, *Throughout. For example, see:*
 - angles, 275
 - angles of a polygon, 534, 543
 - composite figures, 343
 - direct variation, 199
 - distance formula, 661
 - exponents, 714, 729
 - expressions
 - factoring, 93
 - linear, 91
 - simplifying, 85
 - integers
 - adding, 9
 - dividing, 29
 - multiplying, 23
 - subtracting, 15
 - parallelograms, 297
 - percent proportions, 231
 - probability, 435
 - Pythagorean Theorem, 661
 - real numbers, 653
 - repeating decimals, 654
 - scientific notation, 748
 - slope, 579
 - solving equations, 97
 - square roots, 646, 653
 - subtracting rational numbers, 63
 - surface area of a prism, 361
 - transformations
 - dilations, 512, 513
 - similar figures, 505
 - volume
 - of a prism, 377
 - of a pyramid, 383
 - of solids, 683
- Study Tip
 - additive inverse, 11
 - amount of error, 243
- angles
 - alternate exterior, 530
 - alternate interior, 530
 - corresponding, 528
 - exterior, 537
- circumference, 319
- comparing populations, 450
- constructing triangles, 285
- cross products, 173
- decimal points, 216
- direct variation, 200, 584
- discounts, 248
- equations, 765
- exponents, 25, 718
 - Quotient of Powers Property, 725
- expressions
 - linear, 89
 - simplifying, 82
- inequalities
 - graphing, 127
 - solving, 132
- linear equations, 592
 - in point-slope form, 611
 - in slope-intercept form, 592
 - in standard form, 598
 - writing, 604, 611
- opposites, 11
- ordering decimals and percents, 222
- percent proportions, 228
- powers, 25, 712
- prisms, 378
- probability, 408
 - Fundamental Counting Principle, 422
 - simulating outcomes, 436, 437
- proportional relationships, 177, 584
- pyramids, 384
 - volume of, 384
- Pythagorean triples, 658
- quadrilaterals, 294
- radius, 319
- rational numbers, 47, 52
- ratios, 302
- real numbers, 648
- right triangles, 640
- scale, 300
- scale drawings, 302
- scientific notation, 738, 744, 750
 - in standard form, 750
- simplifying equations, 110
- slope, 194, 574, 575, 584
- solids, 689
 - cones, 680
 - similar solids, 696
- squares, 294
- square roots
 - approximating, 649
 - of zero, 628
- transformations
 - dilations, 509
 - rotations, 486, 487
- transversals, 528, 530
- volume
 - of a cone, 680
 - of a cylinder, 674
 - of a prism, 378
 - of a pyramid, 384
- Subtraction
 - of expressions
 - error analysis, 91
 - linear, 86–91
 - modeling, 87
 - real-life application, 89
 - of integers, 14–19
 - error analysis, 18
 - real-life application, 17
 - writing, 18
- Property
 - of Equality, 98
 - of Inequality, 132
- of rational numbers, 58–63
 - error analysis, 62
 - real-life application, 61
 - writing, 62
- to solve inequalities, 130–135
- Subtraction Property of Equality, 98
- Subtraction Property of Inequality, 132
 - real-life application, 133
- Summary triangle, 238, 492
- Supplementary angles**
 - constructing, 276–281
 - defined, 278
- Surface area
 - of a cylinder, 368–373
 - error analysis, 372
 - formula, 370
 - real-life application, 371
 - formula, 357
 - cylinders, 370
 - prism, 357
 - pyramid, 364
 - rectangular prism, 356

- lateral, defined, 358
 - of a prism, 354–361
 - cube, 358
 - error analysis, 360
 - formula, 357
 - real-life application, 358
 - rectangular, 356
 - triangular, 357
 - writing, 359
 - of a pyramid, 362–367
 - formula, 364
 - real-life application, 365
 - of similar solids, 692–699
 - formula, 695
 - linear measures, 695
 - Symbols**
 - congruent, 468
 - of inequality, 126
 - parallel lines, 528
 - perpendicular lines, 528
 - prime, 474
 - similar, 496
 - square root, 628
 - Symmetry, rotational, 490
- T**
- Term(s)**
 - like, 82
 - error analysis, 84
 - writing, 84
 - Terminating decimal**
 - defined, 46
 - writing, 48
 - Theorem**, defined, 638
 - Theoretical probability**, *See also* Probability
 - defined, 415
 - formula, 415
 - modeling, 418
 - Three-dimensional figure(s), 388–389
 - cross sections of, 388
 - Transformation(s)**
 - congruent figures, 466–467
 - corresponding angles of, 468
 - corresponding sides of, 468
 - defined, 468
 - error analysis, 471
 - identifying, 468
 - reading, 468
 - defined, 474
 - dilations, 506–513
 - center of, 508
 - in the coordinate plane, 506–513
 - defined, 508
 - error analysis, 512
 - scale factor, 508
 - image, 474
 - reflections, 478–483
 - in the coordinate plane, 479–481
 - defined, 480
 - line of, 480
 - writing, 482
 - rotations, 484–491
 - angle of, 486
 - center of, 486
 - in the coordinate plane, 485–491
 - defined, 486
 - rotational symmetry, 490
 - similar figures, 494–505
 - areas of, 500–505
 - defined, 496
 - perimeters of, 500–505
 - reading, 496
 - real-life application, 497
 - writing, 504
 - tessellations, 472–473
 - translations, 472–477
 - in the coordinate plane, 474
 - defined, 528
 - writing, 476
 - Translation(s)**, 472–477
 - in the coordinate plane, 473–477
 - defined, 474
 - tessellations, 472–473
 - writing, 476
 - Transversal(s)**, 526–533
 - alternate exterior angles and, 530
 - alternate interior angles and, 530
 - corresponding angles and, 528
 - defined, 528
 - exterior angles and, 529
 - interior angles and, 529
 - Trapezoid, defined, 294
 - Triangle(s)**
 - acute, 284
 - angles of, 534–539
 - error analysis, 539
 - exterior, 536
 - interior, 536
 - real-life application, 537
 - area of, formula, 341
 - classifying
 - by angles, 284
 - error analysis, 286
 - by sides, 284
 - writing, 286
 - congruent, 466–468
 - congruent sides, 284
 - constructing, 282–287
 - equiangular, 284
 - equilateral, 284
 - isosceles, 284
 - obtuse, 284
 - Pythagorean Theorem, 638–643
 - defined, 640
 - error analysis, 642, 660
 - project, 643
 - real-life applications, 638, 659
 - using, 656–661
 - right, 284
 - hypotenuse, 640
 - legs, 640
 - scalene, 284
 - sum of angle measures, 288–289
 - similar, 550–555
 - angles of, 552
 - modeling, 551
 - project, 551
 - writing, 554
 - Two-step inequalities, *See* Inequality
- U**
- Unbiased sample(s)**, defined, 442
 - Unit rate**
 - defined, 164
 - writing, 167
- V**
- Vertical angles**
 - constructions, 270–275
 - defined, 272
 - error analysis, 274
 - Volume
 - of a composite solid, 689
 - of a cone, 678–683
 - error analysis, 682
 - formula, 680
 - real-life application, 681
 - writing, 682

- of a cylinder, 672–677
 - modeling, 677
 - real-life application, 675
- of a prism, 376–381
 - error analysis, 380
 - formula, 378
 - real-life application, 379
 - rectangular, 376
- writing, 386
- of a pyramid, 382–387
 - formula, 384
 - real-life application, 385
 - writing, 386
- of similar solids, 692–699
 - error analysis, 698
 - formula, 696
- of a sphere, 686–691
 - formula, 688

W

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

- absolute value, 6
- angle measures, 531
- circles, 321
- comparing fractions, decimals,
and percents, 218, 224
- corresponding angles, 470
- dividing integers, 32
- exponents, 714
- inequalities, 134
- linear equations, 570
- percent proportions, 230
- polygons, 547
- powers, 726
- pyramids, 366
- Pythagorean Theorem, 660
- quadrilaterals, 296

- rational numbers, 62
- ratios, 174
- scientific notation, 740
- similar triangles, 554
- solving equations, 100
- square roots, 651
- transformations
 - congruent figures, 470
 - reflections, 482
- volume of solids, 690

Word magnet, 330

Writing, *Throughout. For example, see:*

- comparing populations, 452
- decimals
 - repeating, 48
 - terminating, 48
- discounts, 250
- equations
 - equivalent, 100
 - multi-step, 766
 - solving, 106
 - two-step, 112, 113
 - with variables on both
sides, 771
- exponents, 732
- expressions
 - algebraic, 84
 - linear, 90
- integers
 - additive inverse of, 12
 - dividing, 32
 - multiplying, 26
 - subtracting, 18
- interest rate, 256
- linear equations
 - in point-slope form, 612
 - in standard form, 600
 - powers, 726
- markups, 250

- percents
 - of decrease, 244
 - proportions, 230
- probability
 - events, 433
 - Fundamental Counting
Principle, 425
 - outcomes, 404, 425
- proportions, 182
 - solving, 190
- Pythagorean Theorem, 660
- rates, 167
- rational numbers
 - adding, 54, 55, 65
 - dividing, 65, 68
 - multiplying, 65, 68
 - subtracting, 62, 65
- scientific notation, 740, 746, 752
- similar triangles, 554
- solving inequalities, 139, 143, 150
- square roots, 651, 652
- surface area of a prism, 359
- transformations
 - reflections, 482
 - similar figures, 504
 - translations, 476
- triangles, classifying, 286
- volume
 - of a prism, 386
 - of a pyramid, 386
 - of a solid, 682

X

x-intercept, defined, 592

Y

Y chart, 136

y-intercept, defined, 592