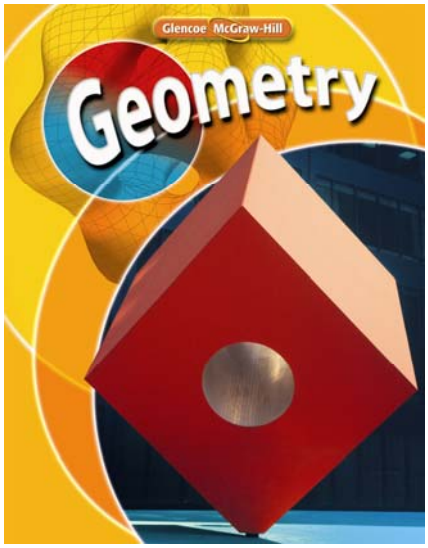
Glencoe

Geometry

Utah



Geometry

© 2008

STANDARDS	PAGE REFERENCES
Standard 1: Students will acquire number sense and perform operations with real numbers.	
There were no new extensions of the number system or number operations introduced in Geometry.	
Standard 2: Students will represent and analyze mathematical situations and properties using patterns, relations, functions, and algebraic symbols.	
Objective 1: Use patterns, relations, and functions to represent mathematical situations.	
a. Identify **trigonometric relationships** (**sine, cosine,** and **tangent**) using right triangles, expressing the relationships as fractions or decimals.	**Student Edition:** 456-462, 463 #10-#13, 464-470, 471-477, 479-485 *Geometry Software Lab* 478 *Graphing Calculator Lab* 455 **Teacher Wraparound Edition** A 455, 470, 485; AE 457, 458, 459, 473, 474, 480, 481; DI 458; PA 459, 465, 485; T 464
b. Analyze geometric patterns to develop formulas and communicate how the formulas were derived, e.g., angle measure and number of sides of a polygon, interior and exterior angles, diagonals, and vertices.	**Student Edition:** 318-323, 330 #46-#49, 339 #45-#48, 347 #3-#5, 370 #11, 373 #1-#3 *Spreadsheet Lab* 324 **Teacher Wraparound Edition** A 323; AE 319, 320, 321; F 320; GL 320; PA 320; T 318

Codes used for Teacher Wraparound Edition pages are the initial caps of headings on that page.

STANDARDS	PAGE REFERENCES
c. Solve problems using the properties of special right triangles, e.g., 30°, 60°, 90° or 45°, 45°, 90°.	**Student Edition:** 448-454, 462 #62-#63, 463 #7-#8, 470 #33-#35, 488 #18-#22, 491 #7-#8, 509 #47 *Extra Practice Lesson 8-3* 815 *Geometry Lab* 447 **Teacher Wraparound Edition** A 454; AE 449, 450; DI 449; F 450; I 450
d. Identify the effect on area or volume when changing linear dimensions.	**Student Edition:** 635 #27-#29, 645 #42-#43, 655 #44-#46, 690 #29-#33, 696 #30, 710 #31, 716 #33-#35, 734 #26, 741 #25 *Spreadsheet Investigation* 752 *Spreadsheet Lab* 736
Objective 2: Evaluate, solve, and analyze mathematical situations using algebraic properties and symbols.	
a. Find the angle measure in degrees given the trigonometric ratio using a calculator.	**Student Edition:** 459 ex 4, 460 #12-#13, 461 #44-#49, 463 #14, 464-470, 472 ex 1, 473 ex 2, 475 #14, 480 ex 2, 482 #3, 483 #19-#22, 489 #32, 490 #36-#37, 491 #14, 503 #49 **Teacher Wraparound Edition** AE 459, 472, 473, 481, 482
b. Find the trigonometric ratio given the angle measure in degrees using a calculator.	**Student Edition:** 456-462, 463 #10-#13, 464-470, 471-477, 479-485 *Geometry Software Lab* 478 *Graphing Calculator Lab* 455 **Teacher Wraparound Edition** A 455, 470, 485; AE 457, 458, 459, 473, 474, 480, 481; DI 458; PA 459, 465, 485; T 464
c. Find the missing measures of right triangles.	**Student Edition:** 456-462, 463 #10-#13, 464-470, 471-477, 479-485 *Geometry Software Lab* 478 *Graphing Calculator Lab* 455 **Teacher Wraparound Edition** A 455, 470, 485; AE 457, 458, 459, 473, 474, 480, 481; DI 458; PA 459, 465, 485; T 464

STANDARDS	PAGE REFERENCES
d. Find missing parts of triangles using the **Law of Sines** or **Law of Cosines**.	**Student Edition:** 471-477, 479-485, 489 #31-#33, 490 #34-#38, 491 #17-#19, 509 #44-#46 *Geometry Lab* 478 **Teacher Wraparound Edition** A 477, 485; AE 472, 473, 474, 480, 481; DI 472, 480; PA 474, 485
e. Write an equation of a line perpendicular or parallel to a line through a given point.	**Student Edition:** 168 #9-#10, 169 #29-#32, 179 #42, 187 #42-#43 *Geometry Lab* 171
f. Model and solve geometric situations using algebraic properties.	**Student Edition:** 399 ex 2, 400 #5, 401 #14-#15, 402 #16-#17, 403 #32, 404 #15-#16, 409 ex 5, 419 #4-#6, 422 #39-#40, 553 #6-#7, 563 ex 1, 575 #32-#33, 583 #4, 584 #15-#17, 611 #10-#15 **Teacher Wraparound Edition** AE 399, 409, 564
Standard 3: Students will solve problems using spatial and logical reasoning, applications of geometric principles, and modeling.	
Objective 1: Analyze characteristics and properties of two- and three-dimensional shapes and develop mathematical arguments about geometric relationships.	
a. Use accepted geometric notations, e.g., congruencies, **transformations**, similarities.	**Student Edition:** 497-503, 504-509, 510-517, 518 #7-#8, 525-532 *Geometry Lab* 496 **Teacher Wraparound Edition** A 503, 509; AE 498, 499, 505, 506, 511, 512, 513, 526, 527; DI 505, 512; PA 509
b. Write **conditional statements, converses**, and **inverses** and determine the **truth value** of the statements.	**Student Edition:** 84 ex 1, 85 ex 2, 91-97, 104 #36-#38, 109 #31, 110 #8, 117 #39-#40, 134 #17-#22, 137 #7 *Reading Math* 98 **Teacher Wraparound Edition** A 97; AE 84, 85, 92, 93; F 94; PA 97; T 98; TNT 92, 93

STANDARDS	PAGE REFERENCES
c. Prove a statement false by using a **counterexample**.	**Student Edition:** 47 #38, 79 ex 3, 80 #5-#6, 81 #25-#30, 109 #31, 110 #1-#2, 133 #11-#13, 134 #19-#22, 137 #1-#3, 138 #1 *Extra Practice Lesson 2-1* 802 *Reading Math* 98 **Teacher Wraparound Edition** A 82; AE 80
d. Identify angle pairs as **adjacent**, **complementary, supplementary, a linear pair,** or **vertical angles**.	**Student Edition:** 40-47, 57 #57-#58, 66 #40-#41, 71 #26-#29, 73 #16, 74 #5, 77 #16-#17, 196 #4, 197 #7 **Teacher Wraparound Edition** A 47; AE 41, 42, 44; DI 43; PA 42; T 48
e. Differentiate between parallel, perpendicular**,** **skew,** and intersecting lines.	**Student Edition:** 142-147, 149-154 **Teacher Wraparound Edition** A 147; AE 143, 144; PA 147
f. Classify angle pairs formed by two lines and a **transversal**, e.g., corresponding, alternate interior, and supplementary angles.	**Student Edition:** 142-147, 149-154, 192 #9-#12, 195 #1, 196 #4 *Geometry Software Lab* 148 **Teacher Wraparound Edition** A 154; AE 144, 150, 151; PA 147; T 148; TNT 144
g. Prove lines parallel or perpendicular using slope or angle relationships.	**Student Edition:** 142-147, 149-154, 159 ex 3, 161 #23-#28, 164 #14-#15, 172-179, 194 #24-#26 *Geometry Lab* 158 *Geometry Software Lab* 148 *Study Tip* 174 **Teacher Wraparound Edition** A 159; AE 159, 173, 174, 175; F 175
h. Prove congruency and similarity of geometric figures.	**Student Edition:** 388-396, 397-403, 404 #11-#13, 414 #36-#60, 422 #39-#40, 425 #12-#13, 427 #6-#8 **Teacher Wraparound Edition** A 396; AE 389, 390, 391, 398, 399; DI 389; F 398; PA 396, 403

STANDARDS	PAGE REFERENCES
i. Identify **medians**, **altitudes**, and **angle bisectors** of a triangle, and the **perpendicular bisectors** of the sides of a triangle.	**Student Edition:** 269-278, 287 #53-#55, 293 #37-#38, 294 #1-#5, 310 #5-#6, 311 #9-#11, 313 #1-#3 *Geometry Lab* 266-268 *Reading Math* 279 **Teacher Wraparound Edition** A 268; AE 270, 272; DI 271; T 266
j. Classify a **quadrilateral** as a **parallelogram**, **trapezoid**, **rectangle**, **square**, **rhombus**, **kite,** or none of the above.	**Student Edition:** 325-330, 333-339, 340-346, 347 #12-#13, 348-354 *Graphing Calculator Lab* 332 *Reading Math* 331 **Teacher Wraparound Edition** A 331, 332, 339; AE 334, 335, 336, 343, 350; DI 335, 354; EA 346; PA 339, 351
k. Identify **radii**, **diameters**, **chords**, **secants**, **arcs**, **sectors**, **central angles**, **inscribed angles**, and **tangents** for circles.	**Student Edition:** 554 ex 1, 555 ex 2, 557 #1-#4, 563-569, 570-577, 578-586, 588-596, 599-606 *Geometry Lab* 597-598, 607-613 **Teacher Wraparound Edition** A 569, 596; AE 555; DI 565; F 591, 601; GL 589; PA 577; T 607
l. Classify and use the properties of acute, right, scalene, obtuse, isosceles, equilateral, or equiangular triangles.	**Student Edition:** 202-208, 216 #41-#43, 223 #42-#43, 233 #1-#2, 257 #11, 256 #1-#4, 261 #1-#3 *Geometry Lab* 209 *Reading Math* 224 **Teacher Wraparound Edition** A 208, 224; AE 203, 204; GL 203; PA 204; T 209
m. Classify polyhedrons and other three-dimensional figures according to their properties.	**Student Edition:** 60-66, 72 #33-#37, 75 #10 **Teacher Wraparound Edition** A 66; AE 61
Objective 2: Specify locations and describe spatial relationships using coordinate geometry.	
a. Graph a circle given the equation in the form $(x - h)^2 + (y - k)^2 = r^2$.	**Student Edition:** 615 ex 3, 617 #6-#7, 624 #56, 625 #21, 627 #13 **Teacher Wraparound Edition** AE 616

STANDARDS	PAGE REFERENCES
b. Write the equation of a circle given its graph with the center of the circle at the origin.	**Student Edition:** 614 ex 1, 615 ex 2, 617 #9-#21, 618 #43, 619 #45, 624 #50-#54, 625 #19, 627 #13, 647 #63-#67 **Teacher Wraparound Edition** AE 615
c. Verify the classifications of geometric figures using coordinate geometry to find lengths and slopes, e.g., verify or prove the diagonals of a rectangle are congruent using the distance formula.	**Student Edition:** 329 #31-#33, 336 ex 5, 343 ex 4, 344 #6, 345 #30-#31, 347 #12-#13, 350 ex 3, 354 #45-#46, 357 ex 3, 359 #3-#4, 360 #13-#16, 361 #25-#26, 364 ex 3, 370 #17-#19, 371 #20 **Teacher Wraparound Edition** AE 336, 343, 350, 357, 364
d. Perform and analyze **transformations** (**translations**, **rotations**, **reflections**, and **dilations**) using coordinate geometry.	**Student Edition:** 497-503, 504-509, 510-517, 518 #10, 524 #38-#41, 525-532, 544 #11-#13, 546 #31-#32, 547 #7-#9, 548 #2, 549 #7 *Geometry Lab* 496 **Teacher Wraparound Edition** AE 498, 499, 505, 511, 527, 528; F 512; PA 509
Objective 3: Use visualization, spatial reasoning, and geometric modeling to solve problems.	
a. Construct/copy angles and segments, bisect angles and segments, and create perpendicular lines and parallel lines using a compass and straight edge, technology, or other manipulatives.	**Student Edition:** *Construction* 16, 25, 33, 35, 172, 182, 186, 266, 268, 409, 413 *Geometry Lab* 48 **Teacher Wraparound Edition** A 48
b. Define π as the ratio of the circumference to the diameter of a circle.	**Student Edition:** *Geometry Lab* 556 **Teacher Wraparound Edition** GL 556
c. Identify the relationships between the measures of **intercepted arcs** and **inscribed** or **central angles**.	**Student Edition:** 578-586, 587 #14, 596 #40-#42, 606 #50-#52, 622 #35-#40, 627 #9, 635 #9 *Geometry Lab* 597-598 **Teacher Wraparound Edition** A 586; AE 579, 580, 581, 582; PA 586

STANDARDS	PAGE REFERENCES
d. Solve real-world problems using geometric properties, trigonometric ratios and properties of congruent and similar figures, e.g., "How much paint is needed to paint a room?" or "How can we ensure square corners in a building during construction?"	**Student Edition:** 153 #24-#35, 178 #30, 185 #2, 207 #33, 213 ex 3, 215 #27-#29, 276 #26, 284 ex 4, 286 #38, 294 #10, 317 #2, 319 ex 1, 323 #51, 383 #11, 389 ex 2, 391 ex 5 **Teacher Wraparound Edition** AE 213, 284, 319, 390, 391
e. Sketch cross-sections of geometric solids.	**Student Edition:** 682 ex 3, 683 #14-#19, 684 #33-#35, 691 #41-#43 **Teacher Wraparound Edition** AE 682; GL 681
Standard 4: Students will understand and apply measurement tools, formulas, and techniques.	
Objective 1: Determine measurements using appropriate techniques, tools, and formulas.	
a. Find the area of a regular polygon.	**Student Edition:** 630-636, 638-647, 649, 650 ex 1, 653 #1-#2, 654 #25-#26, 656 #53 *Geometry Lab* 648, 651 *Graphing Calculator Lab* 637 **Teacher Wraparound Edition** A 636, 648, 656; AE 631, 632, 633, 639, 640, 641, 650; PA 647
b. Find the length of an arc and the area of a **sector**.	**Student Edition:** 565 ex 2, 566 ex 4, 567 #5-#8, 568 #32-#35, 577 #53-#55, 587 #5, 621 #17-#20, 625 #7-#9, 666 ex 2, 668 #2-#3, 669 #14-#16, 671 #33, 674 ex 5 **Teacher Wraparound Edition** A 569; AE 565, 566, 666; DI 565; PA 569
c. Find the surface area and volume for **prisms**, **cylinders**, **pyramids**, cones, and **spheres** given the formula.	**Student Edition:** 686-691, 693-697, 698 #9-#10, 699-705, 706-710, 728-735, 737-742 **Teacher Wraparound Edition** A 691, 697, 705; AE 687, 688, 694, 700, 701, 707, 708; DI 707; F 695; PA 694
d. Estimate the area of an irregular region.	**Student Edition:** 658-663, 671 #35-#36, 674 #30-#22, 676 #1, 675 #15 **Teacher Wraparound Edition** AA 665; AE 632, 659, 660; PA 659

STANDARDS	PAGE REFERENCES
Standard 5: Students will draw conclusions using concepts of probability after collecting, organizing, and analyzing a data set.	
Objective 1: Apply basic concepts of probability.	
a. Identify geometric probabilities by performing simulations involving length or area.	**Student Edition:** 665-671, 674 #23-#25, 675 #11-#13, 685 #45-#48, 691 #44 **Teacher Wraparound Edition** A 671; AE 666, 667; I 667; PA 671
b. Calculate geometric probability.	**Student Edition:** 665-671, 674 #23-#25, 675 #11-#13, 685 #45-#48, 691 #44 **Teacher Wraparound Edition** A 671; AE 666, 667; I 667; PA 671