



Algebra 2

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STANDARDS	PAGE REFERENCES
<p>MA 12.1 Students will communicate number sense concepts using multiple representations to reason, solve problems, and make connections within mathematics and across disciplines.</p>	
<p>MA 12.1.1 Number System: Students will represent and show relationship numbers.</p>	
<p>MA 12.1.1.a Demonstrate multiple equivalent forms of irrational numbers (e.g., $\sqrt{8} = 8^{1/2} = 2\sqrt{2}$)</p>	<p>Student Edition: 285 Example 2, 525, 527 <i>Check Your Understanding</i> 288 #1-#4 <i>H.O.T. Problems</i> 16 #53, #57 <i>Key Concept</i> 11 <i>Practice and Problem Solving</i> 14 #25, 16 #51, 288 #14-#25, #49-#52, 434 #38-#45 <i>Skills Review</i> 430 #64</p> <p>Teacher Edition: AE 527; FM 14; T 525</p>

STANDARDS	PAGE REFERENCES
<p>MA 12.1.1.b Compare, contrast and apply the properties of numbers and the real number system, including rational, irrational, imaginary, and complex numbers</p>	<p>Student Edition: 20-21, 278-279, 510-511 <i>Check Your Understanding</i> 14 #1-#4, 22, 280, 512 <i>H.O.T. Problems</i> 16 #53, #58-#60, 24, 281, 515 <i>Key Concept</i> 11, 19, 27, 509, 510, 511 <i>Practice and Problem Solving</i> 14 #18-#25, 22-24, 280-281, 512-514 <i>Practice Test</i> 53 #5-#20 <i>Study Guide and Review</i> 50 1-2, 51-52</p> <p>Teacher Edition: AE 12, 13, 19; FM 14, 510</p>
<p>MA 12.1.2 Operations: Students will demonstrate the meaning and effects of arithmetic operations with real numbers.</p>	
<p>MA 12.1.2.a Use drawings, words, and symbols to explain the effects of such operations as multiplication and division, and computing positive powers and roots on the magnitude of quantities (e.g., if you take the square root of a number, will the result always be smaller than the original number? (e.g., $\sqrt{1/4} = 1/2$))</p>	<p>Student Edition: 20-23, 28 Example 2, 44, 76-78, 118 Example 2, 143-145, 360 Example 4, 454 Example 2, 562-564 <i>Algebra Lab</i> 311, 356 <i>Concept Summary</i> 146 <i>Graphing Technology Lab</i> 236, 319 <i>Practice and Problem Solving</i> 30 #23-#34, 72 #25, #41-#43, 264-265, 272-274, 776-777 <i>Spiral Review</i> 107 #49 <i>Standardized Test Practice</i> 56-57, 130-131, 328-329, 404-405 <i>Why?</i> 193</p> <p>Teacher Edition: AE 20, 44, 77, 564, 775</p>
<p>MA 12.1.2.b Use drawings, words, and symbols to explain that the distance between two numbers on the number line is the absolute value of their difference</p>	<p>Student Edition: 28 Example 2, 41-42 Example 1, Example 2, 43 Example 3, 44 Example 4 <i>Key Concept</i> 27, 33, 41, 42</p> <p>Teacher Edition: T 27</p>

STANDARDS	PAGE REFERENCES
<p>MA 12.1.3 Computation: Students will compute fluently and accurately using appropriate strategies and tools.</p>	
<p>MA 12.1.3.a Compute accurately with real numbers</p>	<p>Student Edition: 12-13, 76-78, 94-95, 203 <i>Algebra Lab</i> 311, 340, 356 <i>Check Your Understanding</i> 14, 79 <i>Concept Summary</i> 297, 333 <i>Graphing Technology Lab</i> 90 <i>H.O.T. Problems</i> 81, 89 #47-#49 <i>Key Concept</i> 5, 19, 33, 43, 384, 409, 425, 455 <i>Practice and Problem Solving</i> 14-15, 79-81 <i>Spiral Review</i> 25 #73 <i>Why?</i> 553</p> <p>Teacher Edition: AE 13, 19, 77, 78, 94; FM 35; TT 6; WO 34</p>
<p>MA 12.1.3.b Simplify exponential expressions (e.g., powers of -1, 0, $\frac{1}{2}$, $3^2 * 3^2 = 3^4$)</p>	<p>Student Edition: 333-336, 341-343 <i>Check Your Understanding</i> 337, 345 <i>Concept Summary</i> 333 <i>H.O.T. Problems</i> 338 <i>Key Concept</i> 343 <i>Practice and Problem Solving</i> 337-338, 345-346 <i>Study Guide and Review</i> 398 6-1, 6-2 <i>Why?</i> 333, 341</p> <p>Teacher Edition: AE 334, 335, 336, 343, 344; DI 339; T 333</p>
<p>MA 12.1.3.c Multiply and divide numbers using scientific notation</p>	<p>Student Edition: 533 Example 1 <i>Check Your Understanding</i> 519 #5, 537 #1 <i>Concepts and Skills Bank</i> 997 <i>Practice and Problem Solving</i> 338 #51, 434 #56, 537 #4 <i>Why?</i> 333</p> <p>Teacher Edition: AE 997; T 333; TT 997</p>

STANDARDS	PAGE REFERENCES
<p>MA 12.1.3.d Select, apply, and explain the method of computation when problem solving using real numbers (e.g., models, mental computation, paper-pencil, or technology)</p>	<p>Student Edition: 13 Example 4, 110-111, 118, 143 Example 1, 260-262, 293 Example 1, 295 Example 4, 478 Example 4, 578-580, 682 Example 2 <i>Graphing Technology Labs</i> 142, 236, 267, 303-304, 319, 365-366, 500-501, 523-524, 630 <i>Preparing for Standardized Tests</i> 326-327, 402-403, 456-457, 610-611, 884-885 <i>Why?</i> 259 Teacher Edition: TT 262</p>
<p>MA 12.1.4 Estimation: Students will estimate and check reasonableness of answers using appropriate strategies and tools.</p>	
<p>MA 12.1.4.a Use estimation methods to check the reasonableness of real number computations and decide if the problem calls for an approximation or an exact number (e.g., 10π (pi) is approximately 31.4, square and cube roots)</p>	<p>Student Edition: 93 Example 1, 94-95 Example 2, 433 Example 3 <i>Check Your Progress</i> 93 <i>Check Your Understanding</i> 95 <i>H.O.T. Problems</i> 97, 381 #39, <i>Practice and Problem Solving</i> 95-96, 140 #41, 298 #20, 299 #41c, 381 #31, <i>Standardized Test Practice</i> 390 #62 <i>Preparing for Standardized Tests</i> 54-55, 128-129, 179, 610-611 <i>Problem-Solving Handbook</i> 944 Teacher Edition: AE 94, 95; DI 89</p>
<p>MA 12.1.4.b Distinguish relevant from irrelevant information, identify missing information and either find what is needed or make appropriate estimates</p>	<p>Student Edition: <i>Preparing for Standardized Tests</i> 128-129, 469 <i>Problem-Solving Handbook</i> 945</p>

STANDARDS	PAGE REFERENCES
<p>MA 12.2 Students will communicate geometric concepts and measurement concepts using multiple representations to reason, solve problems, and make connections within mathematics and across disciplines.</p>	
<p>MA 12.2.1 Characteristics: Students will analyze characteristics, properties, and relationships among geometric shapes and objects.</p>	
<p>MA12.2.1.a Identify and explain the necessity of and give examples of definitions and theorems</p>	<p>Student Edition: P17-P18, 818, 820, 826, 832-836 Examples, 841-843 Examples <i>Algebra Lab</i> 726 <i>Check Your Understanding</i> 729 #3 <i>Geometry Lab</i> 824 <i>H.O.T. Problems</i> 815, 822, 830, 838 <i>Key Concept</i> 808, 811, 817, 820, 825, 826, 832, 841 <i>Practice and Problem Solving</i> 729 #16 <i>Spiral Review</i> 459 #83 <i>Spreadsheet Lab</i> 807 <i>Why?</i> 808 Teacher Edition: AE P17, P18, 809, 833; T 841; TT P18; WO P18, 833</p>
<p>MA 12.2.1.b Analyze properties and relationships among classes of two and three dimensional geometric objects using inductive reasoning and counterexamples</p>	<p>Student Edition: P15-P16 <i>Geometry Lab</i> 840 <i>H.O.T. Problems</i> 88 #37-#38 <i>Mid-Chapter Quiz</i> 26 #20 <i>Practice and Problem Solving</i> 23 #51 <i>Posttest</i> P19 #28 <i>Spiral Review</i> 452 #91 <i>Spreadsheet Lab</i> 807 Teacher Edition: AE P15, P16; EC 807</p>
<p>MA 12.2.1 c State and prove geometric theorems using deductive reasoning (e.g., parallel lines with transversals, congruent triangles, similar triangles)</p>	<p>Student Edition: P15-P16, P18 <i>Geometry Lab</i> 824 <i>Practice and Problem Solving</i> 9 #40, <i>Spiral Review</i> 25 #73, 107 #56, 452 #91 <i>Spreadsheet Lab</i> 807 <i>Standardized Test Practice</i> 613 #12 Teacher Edition: AE P15, P16; TT P16; EC 807; WO P16</p>

STANDARDS	PAGE REFERENCES
<p>MA 12.2.1.d Apply geometric properties to solve problems (e.g., parallel lines, line transversals, similar triangles, congruent triangles, proportions)</p>	<p>Student Edition: P15-P16, 721-722, 808-812 Examples, 833-834 Examples, 841-843 Examples <i>Algebra Lab</i> 726 <i>Geometry Lab</i> 840 <i>Get Ready</i> 805 <i>H.O.T. Problems</i> 88 #37 <i>Practice and Problem Solving</i> 701 #60, 37 #40 <i>Spiral Review</i> 107 #56, 452 #91, 870 #78 <i>Spreadsheet Lab</i> 807 <i>Standardized Test Practice</i> 763 #28</p> <p>Teacher Edition: AE P15, P16, P17, P18, 809, 834; EC 807; T 808, 841; TT P18; WO P16, P18</p>
<p>MA 12.2.1.e Identify and apply right triangle relationships (e.g., sine, cosine, tangent, special right triangles, converse of Pythagorean Theorem)</p>	<p>Student Edition: P17-P18, 808-802 Examples, 832-836 Examples, 841-843 Examples <i>Check Your Understanding</i> 813, 836, 843 <i>Geometry Lab</i> 840 <i>H.O.T. Problems</i> 845 <i>Practice and Problem Solving</i> 813-815, 837-838, 844-845 <i>Key Concept</i> 808, 809, <i>Spiral Review</i> 459 #83, 823 #58-#60 <i>Spreadsheet Lab</i> 807</p> <p>Teacher Edition: AE 810, 811, 812, 833, 834</p>
<p>MA 12.2.1.f Recognize that there are geometries, other than Euclidean geometry, in which the parallel postulate is not true</p>	<p>See Glencoe's <i>Geometry</i> © 2010.</p> <p>Student Edition: 873-878, 886 #37-#39, 890 #31-#37, 891 #11-#15 <i>Geometry Lab</i> 879</p> <p>Teacher Edition: A 878; AE 874, 875; DI 874; TWT 875</p>

STANDARDS	PAGE REFERENCES
<p>MA12.2.1.g Know the definitions and basic properties of a circle and use them to prove basic theorems and solve problems</p>	<p>Student Edition: 631-633 Examples <i>Check Your Understanding</i> 634 <i>H.O.T. Problems</i> 636 <i>Key Concept</i> 631 <i>Mid-Chapter Quiz</i> 647 #15-#16 <i>Practice and Problem Solving</i> 634-636 <i>Spiral Review</i> 655 #56-#58 <i>Study Guide and Review</i> 670 10-3</p> <p>Teacher Edition: A 635; AE 632, 633; DI 637; T 631; TT 633</p>
<p>MA 12.2.2 Coordinate Geometry: Student will use coordinate geometry to analyze and describe relationships in the coordinate plane.</p>	
<p>MA 12.2.2.a Use coordinate geometry to analyze geometric situations (e.g., parallel lines, perpendicular lines, circle equations)</p>	<p>Student Edition: 86 Example 4, 110-111 Examples <i>Check Your Understanding</i> 86 #6-#7, 664 #9 <i>Graphing Technology Lab</i> 108 <i>H.O.T. Problems</i> 88 #40 <i>Key Concept</i> 85, 109 <i>Practice and Problem Solving</i> 87 #23-#26, 114 #39, 115 #40 <i>Spiral Review</i> 107 #50-#52 <i>Study Guide and Review</i> 124 #39-#40</p> <p>Teacher Edition: AE 84, 110, 111, 112</p>
<p>MA 12.2.2.b Apply the midpoint formula</p>	<p>Student Edition: 617 Example 1, 619 Example 3, 632 Example 3 <i>Chapter Summary</i> 668 <i>Check Your Understanding</i> 619 #1-#4 <i>H.O.T. Problems</i> 621 #42-#44, #46 <i>Key Concept</i> 617 <i>Practice and Problem Solving</i> 620 #10-#15, #24-#36, #38, 621 #39-#40 <i>Study Guide and Review</i> 669 10-1 <i>Study Tip</i> 619 <i>Test-Taking Tip</i> 619</p> <p>Teacher Edition: AE 618; DI 618; TT 619</p>

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MA 12.2.2.c Apply the distance formula	<p>Student Edition: 618 Example 2, 632 Example 3 <i>Chapter Summary</i> 668 <i>Check Your Understanding</i> 619 #5-#9 <i>H.O.T. Problems</i> 621 #44-#45 <i>Key Concept</i> 618 <i>Practice and Problem Solving</i> 620 #16-#24, #37 <i>Preparing for Standardized Tests</i> 674-675 Example <i>Study Guide and Review</i> 669 10-1 <i>Study Tip</i> 618 <i>Why?</i> 617</p> <p>Teacher Edition: AE 618; T 617</p>
MA 12.2.2.d Prove special types of triangles and quadrilaterals (e.g., right triangles, isosceles trapezoid, parallelogram, rectangle, square)	<p>Student Edition: P17-P18, 808-811 Examples, 832 <i>Geometry Lab</i> 824, 840 <i>H.O.T. Problems</i> 88 #37, 815 #56, 838, 845 <i>Key Concept</i> 808, 809, 832. 833, 834, 841 <i>Spreadsheet Lab</i> 807</p> <p>Teacher Edition: AE P17, P18; EC 807; T 834; TT P18, 809, 834; WO P18</p>
MA 12.2.3 Transformations: Students will apply and analyze transformations.	
MA 12.2.3.a Explain and justify the effects of simple transformations on the ordered pairs of two-dimensional shapes	<p>Student Edition: 209, 210-213 Examples, 417-419 Examples <i>Algebra Lab</i> 218-219 <i>Check Your Understanding</i> 213-214 <i>Graphing Technology Lab</i> 423 <i>H.O.T. Problems</i> 216 <i>Key Concept</i> 212, 417 <i>Practice and Problem Solving</i> 214-216 <i>Spiral Review</i> 266 #67 <i>Study Guide and Review</i> 239 4-4 <i>Why?</i> 209</p> <p>Teacher Edition: AE 210, 211, 212, 213, 418; DI 216, 217; FM 212; T 209; TT 210; WO 212</p>

STANDARDS	PAGE REFERENCES
MA 12.2.3.b Perform and describe multiple transformations	Student Edition: <i>H.O.T. Problems</i> 216 #46 <i>Practice and Problem Solving</i> 701 #60, 718 #43, #46, 730 #32 <i>Spiral Review</i> 266 #67
MA 12.2.4 Spatial Modeling: Students will use visualization, spatial reasoning, and geometric modeling to solve problems.	
MA 12.2.4.a Sketch and draw appropriate representations of geometric objects using ruler, protractor, or technology	Student Edition: <i>Graphing Technology Lab</i> 108 <i>Preparing for Standardized Tests</i> 402-403 <i>Practice and Problem Solving</i> 9 #42 Teacher Edition: T 402
MA 12.2.4.b Use geometric models to visualize, describe, and solve problems (e.g., find the height of a tree; find the amount of paint needed for a room; scale model)	Student Edition: 442 Example 6, 810 Example 4, 812 Example 6, 836 Example 4 <i>Algebra Lab</i> 703-704 <i>Check Your Understanding</i> 443 #17 <i>Exercise</i> P16 #10 <i>Practice and Problem Solving</i> 443 #34-#35, 620 #37, 815 #46-#49 <i>Spiral Review</i> 25 #73, 32 #68 <i>Standardized Test Practice</i> 228 #64, 771 #31 Teacher Edition: A 704; AE 619, 812; DI 634
MA 12.2.5 Measurement: Students will apply the units, systems, and formulas to solve problems.	
MA 12.2.5.a Use strategies to find surface area and volume of complex objects	Student Edition: 6 Example 3, 370 Example 4 <i>Practice and Problem Solving</i> 394 #39 <i>Spiral Review</i> 515 #82
MA 12.2.5.b Apply appropriate units and scales to solve problems involving measurement	Student Edition: 76 Example 1, 271 Example 5, 370 Example 4 <i>Check Your Understanding</i> 297 #9 <i>Practice and Problem Solving</i> 72 #42, 80 #22, 81 #30, 155 #26, 274 #70, 394 #39, 420 #39, 450 #28 <i>Spiral Review</i> 25 #72-#73, 32 #68 Teacher Edition: T 76

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MA 12.2.5.c Convert between various units of area and volume, such as square feet to square yards	<p>Student Edition: <i>Practice and Problem Solving</i> 88 #36, 421 #49</p> <p>Teacher Edition: AE 70</p>
MA 12.2.5.d Convert equivalent rates (e.g., feet/second to miles/hour)	<p>Conversion of equivalent rates can be taught along with Lesson 2-3 Rate of Change and Slope</p>
MA 12.2.5.e Find arc length and area of sectors of a circle	<p>Student Edition: 820 Example 5, 821 #33-#34, 822 #52 <i>Key Concept</i> 820 <i>Mid-Chapter Quiz</i> 847 #9 <i>Watch Out!</i> 820</p> <p>Teacher Edition: AE 820</p>
MA 12.2.5.f Determine surface area and volume of three-dimensional objects (e.g., spheres, cones, pyramids)	<p>Student Edition: 6 Example 3 <i>Check Your Understanding</i> 393 #3, 557 #12 <i>Mid-Chapter Quiz</i> 438 #30 <i>Practice Test</i> 401 #24 <i>Practice and Problem Solving</i> 8 #35, 9 #42, 316 #32, 345 #32, 373 #57, 434 #46 <i>Preparing for Standardized Tests</i> 55 #4 <i>Spiral Review</i> 575 #59 <i>Standardized Test Practice</i> 471 #12, 741 #13 <i>Spiral Review</i> 515 #82 <i>Study Guide and Review</i> 400 6-8 #56</p> <p>Teacher Edition: AE 21, 55, 393; MR 9</p>
MA12.2.5.g Know that the effect of a scale factor k on length, area and volume is to multiply each by k , k^2 and k^3 , respectively	<p>This objective can be discussed with the following examples:</p> <p>Student Edition: <i>Mid-Chapter Quiz</i> 26 #20 <i>Practice and Problem Solving</i> 434 #46 <i>Spiral Review</i> 32 #68</p> <p>Teacher Edition: DI 8</p>

STANDARDS	PAGE REFERENCES
<p>MA 12.3 Students will communicate algebraic concepts using multiple representations to reason, solve problems, and make connections within mathematics and across disciplines.</p>	
<p>MA 12.3.1 Relationships: Students will generalize, represent, and analyze relationships using algebraic symbols.</p>	
<p>NON LINEAR FUNCTIONS INCLUDE: QUADRATIC, ABSOLUTE VALUE, SQUARE ROOT, EXPOTENTIAL</p>	
<p>MA 12.3.1.a Represent, interpret, and analyze functions with graphs, tables, and algebraic notation and convert among these representations (e.g., linear, non-linear)</p>	<p>Student Edition: 93 Example 1, 94 Example 2 <i>Algebra Lab</i> 99-100 <i>Check Your Understanding</i> 95 <i>H.O.T. Problems</i> 97 <i>Graphing Technology Lab</i> 319 <i>Practice and Problem Solving</i> 96-97 <i>Standardized Test Practice</i> 98 #20, 107 #45</p> <p>Teacher Edition: A 100; AE 93, 95</p>
<p>MA 12.3.1.b Identify domain and range of functions represented in either symbolic or graphical form (e.g., linear, non-linear)</p>	<p>Student Edition: P4, 61 Example, 63, 424 Example 1, 571 Example 3 <i>Check Your Understanding</i> 64, 427, 572 <i>H.O.T. Problems</i> 66 <i>Key Concept</i> 62 <i>Practice and Problem Solving</i> 65-66, 427-429, 573 #7-#22, #25-#28 <i>Study Guide and Review</i> 123 2-1 <i>Why?</i> 61</p> <p>Teacher Edition: AE P5, 62, 63, 64, 425, 570; TT 426</p>
<p>MA 12.3.1.c Identify the slope and intercepts of a linear relationship from an equation or graph</p>	<p>Student Edition: 77, 78 Examples, 83, 84-85 Examples <i>Check Your Understanding</i> 79 #4-#6 <i>Graphing Technology Lab</i> 90 <i>H.O.T. Problems</i> 81 #36 <i>Key Concept</i> 78, 83 <i>Mid-Chapter Quiz</i> 91 #12-#13, #19 <i>Practice and Problem Solving</i> 80 #12-#17 <i>Study Guide and Review</i> 124</p> <p>Teacher Edition: AE 78, 84; FM 85</p>

STANDARDS	PAGE REFERENCES
MA 12.3.1.d Identify characteristics of linear and non-linear functions	<p>Student Edition: P4, P5 Example 3, 61-63, 69-71, 101, 350, 351 Example 4, 424 <i>Algebra Lab</i> 68, 75 <i>Check Your Understanding</i> 64, 352 <i>Concept Summary</i> 146 <i>Exercises</i> P5 <i>H.O.T. Problems</i> 66, 73, 354, 429 <i>Key Concept</i> 61, 62, 103, 350, 425, 577 <i>Practice and Problem Solving</i> 64-66 <i>Why?</i> 61</p> <p>Teacher Edition: AE P5, 62, 63, 70, 71, 351; DI 67; TT 62</p>
MA 12.3.1.e Graph linear and non-linear functions	<p>Student Edition: 63 Example 3, 101 Example 1, 104 Example 4, 136-137, 143 Example 1, 151-153 Examples, 357, 426 Example 4 <i>Check Your Understanding</i> 64, 104 #1-#2, #6-#11, 154, 427 #4-#7 <i>Graphing Technology Lab</i> 142, 158 <i>H.O.T. Problems</i> 66 #38, 106 #41 <i>Practice and Problem Solving</i> 65 #15-#21, 66 #34, 105 #12-#15, #20-#31, 106 #35-#39, 154-156, 428 #31-#38 <i>Why?</i> 135, 151</p> <p>Teacher Edition: AE 63, 64, 71, 102, 103, 136, 137, 138, 358, 359; DI 141, 157; TT 62</p>
MA 12.3.1.f Compare and analyze the rate of change by using ordered pairs, tables, graphs, and equations	<p>Student Edition: 76-77, 94-95 Example 2 <i>Algebra Lab</i> 311, 356 <i>Check Your Understanding</i> 79 #1-#3, #7-#8 <i>Mid-Chapter Quiz</i> 91 #14 <i>Practice and Problem Solving</i> 79, 80 #11, #18-#28, 81 #30, #35 <i>Preparing for Standardized Tests</i> 129 <i>Spiral Review</i> 89 #47-#49, 98 #24-#27 <i>Study Guide and Review</i> 124 2-3 <i>Why?</i> 76</p> <p>Teacher Edition: AE 77, 129</p>

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MA 12.3.1.g Graph and interpret linear inequalities	<p>Student Edition: 41-43 Examples, 117-118 Examples <i>Algebra Lab</i> 40 <i>Key Concept</i> 41 <i>Practice Test</i> 53 #10-#14, #22 <i>Preparing for Standardized Tests</i> 55 #1 <i>Study Guide and Review</i> 52 1-6</p> <p>Teacher Edition: AE 42, 43, 44; WO 42</p>
MA 12.3.1.h Represent, interpret, and analyze functions and their inverses	<p>Student Edition: P5 Example 3, 61-64 Examples, 76, 94-95 Example 2, 350, 424 Example 1, 569 <i>Algebra Lab</i> 75, 311, 356 <i>Check Your Understanding</i> 64 <i>Exercises</i> P5 #1-#8 <i>Graphing Technology Lab</i> 365 <i>H.O.T. Problems</i> 66 <i>Key Concept</i> 350, 351, 409, 424, 569 <i>Practice and Problem Solving</i> 65-66 <i>Preparing for Standardized Tests</i> 129 <i>Spiral Review</i> 74 #61-#63 <i>Study Guide and Review</i> 123 2-1 <i>Why?</i> 61</p> <p>Teacher Edition: AE P5, 62, 77, 78, 84; SQ 61; TT 70</p>
MA 12.3.1.i Determine if a relation is a function	<p>Student Edition: P5 Example 3, 61-64 Examples, 69 <i>Algebra Lab</i> 68 <i>Check Your Understanding</i> 64 <i>Exercises</i> P5 #1-#8 <i>Key Concept</i> 61 <i>Practice and Problem Solving</i> 65-66 <i>Spiral Review</i> 74 #61-#63</p> <p>Teacher Edition: AE P5, 62, 63, 64, 70; DI 67</p>

STANDARDS	PAGE REFERENCES
<p>MA 12.3.2 Modeling in Context: Students will model and analyze quantitative relationships. CONTEXTUALIZED PROBLEM – A MATHEMATICAL SITUATION PLACED IN A PARTICULAR CONTEXT (E.G., USING WORDS, DIAGRAMS, TABLES, DRAWINGS, ETC.)</p>	
<p>MA 12.3.2.a Model contextualized problems using various representations (e.g., graphs, tables, one variable equalities, one variable inequalities, linear equations in slope intercept form, inequalities in slope intercept form, system of linear equations with two variables)</p>	<p>Student Edition: 76-77 Examples, 93 Example 1, 94-95 Example 2, 135, 151-153 Examples, 409 <i>Algebra Lab</i> 99-100, 356 <i>Check Your Understanding</i> 79 #3, 154 <i>Graphing Technology Lab</i> 90, 142, 158 <i>H.O.T. Problems</i> 156 <i>Key Concept</i> 92 <i>Practice and Problem Solving</i> 80 #11, 154-156 <i>Why?</i> 76, 92, 135</p> <p>Teacher Edition: AE 77, 95, 136, 137, 152, 153; DI 89, 411</p>
<p>MA 12.3.2.b Represent a variety of quantitative relationships using linear equations and one variable inequalities</p>	<p>Student Edition: 83, 84-86 Examples , 412 Example 4 <i>Algebra Lab</i> 311 <i>Check Your Understanding</i> 86 <i>Graphing Technology Lab</i> 90 <i>H.O.T. Problems</i> 88 <i>Key Concept</i> 83 <i>Practice and Problem Solving</i> 87-88</p> <p>Teacher Edition: AE 84, 85, 86</p>
<p>MA 12.3.2.c Analyze situations to determine the type of algebraic relationship (e.g., linear, nonlinear)</p>	<p>Student Edition: 101-104 Examples, 110-112 Examples, 312, 357, 409-412 Examples, 533-535 Examples <i>Algebra Lab</i> 311 <i>Check Your Understanding</i> 413 <i>Graphing Technology Lab</i> 90, 108, 423, 540 <i>H.O.T. Problems</i> 415 <i>Key Concept</i> 109 <i>Practice and Problem Solving</i> 87 #27-#29, 88 #33-#36, 413-415 <i>Spiral Review</i> 89 #50 <i>Study Guide and Review</i> 126 2-7 <i>Why?</i> 83, 357, 383</p> <p>Teacher Edition: AE110, 111 410, 411, 412, 536; DI 415</p>

STANDARDS	PAGE REFERENCES
<p>MA 12.3.2.d Model contextualized problems using various representations for non-linear functions (e.g., quadratic, exponential, square root, and absolute value)</p>	<p>Student Edition: 251 Example 2, 253 Example 4, 271 Example 5, 336 Example 5, 495 Example 6, 572 Example 4 <i>Graphing Technology Lab</i> 291, 500-501 <i>Mid-Chapter Quiz</i> 283 #8 <i>Practice and Problem Solving</i> 337 #40, 338 #51, #64, 560 #58 <i>Study Guide and Review</i> 322 #29 <i>Why?</i> 492, 553, 569</p> <p>Teacher Edition: AE 271, 336, 495; T553</p>
<p>MA 12.3.3 Procedures: Students will represent and solve equations and inequalities.</p>	
<p>MA 12.3.3.a Explain/apply the reflexive, symmetric, and transitive properties of equality</p>	<p>Student Edition: 19 Example 3 <i>Check Your Understanding</i> 22 #7-#8 <i>Key Concept</i> 19 <i>Practice and Problem Solving</i> 22 #32</p> <p>Teacher Edition: AE 19; TT 20</p>
<p>MA 12.3.3.b Simplify algebraic expressions involving exponents (e.g., $(3 \times 4)^2$)</p>	<p>Student Edition: 333, 334 Example 1, 335 Example 3, 336 Example 4, 446 Example 1, 448-449 Examples <i>Check Your Understanding</i> 33 #1-#4, #9-#14, 449 #10-#15 <i>Concept Summary</i> 333 <i>H.O.T. Problems</i> 338 #68, 451 #70 <i>Practice and Problem Solving</i> 337 #16-#23, #28-#29, 338 #41-#50, #52-#60, 450 #30-#39, #44-#51, 451 #53-#64 <i>Problem Solving Tip</i> 334 <i>Standardized Test Practice</i> 339 #70-#73 <i>Study Guide and Review</i> 465 7-5</p> <p>Teacher Edition: AE 334, 335, 449 DI 339; FM 334; TT 335</p>

STANDARDS	PAGE REFERENCES
MA 12.3.3.c Add and subtract polynomials	<p>Student Edition: 335 Example 3, 562-564 <i>Check Your Understanding</i> 337 #9-#10, 564 <i>H.O.T. Problems</i> 567 <i>Practice and Problem Solving</i> 337 #28-#29, #34-#37, 565-567 <i>Study Guide and Review</i> 398 6-1, 606 9-2 <i>Why?</i> 562</p> <p>Teacher Edition: AE 335, 565; DI 566; TT 335</p>
MA 12.3.3.d Multiply and divide polynomials (e.g., divide $x^3 - 8$ by $x - 2$, divide $x^4 - 5x^3 - 2x$ by x^2)	<p>Student Edition: 334 Example 1, 336 Example 6, 553-557 <i>Check Your Understanding</i> 337 #11-#14, 557 <i>H.O.T. Problems</i> 560 <i>Key Concept</i> 555 <i>Practice and Problem Solving</i> 337 #30-#33, #38-#39, 338 #41-#50, #52-#60, 558-560 <i>Study Guide and Review</i> 398 6-1, 606 9-1 <i>Why?</i> 553</p> <p>Teacher Edition: AE 336, 554, 555, 556, 557; DI 561</p>
MA 12.3.3.e Factor polynomials	<p>Student Edition: P7-P8 Examples, 268-271 Examples, 556 Example 5 <i>Check Your Understanding</i> 272 <i>Concept Summary</i> 269 <i>Exercises</i> P8 <i>H.O.T. Problems</i> 274 <i>Key Concept</i> 268 <i>Mid-Chapter Quiz</i> 283 #10-#13 <i>Practice and Problem Solving</i> 272-274 <i>Spiral Review</i> 282 #75-#77 <i>Study Guide and Review</i> 322 5-3 <i>Why?</i> 268</p> <p>Teacher Edition: AE P7, P8, 269, 270</p>

STANDARDS	PAGE REFERENCES
MA 12.3.3.f Identify and generate equivalent forms of linear equations	<p>Student Edition: <i>Check Your Understanding</i> 71 #6-#11, 86 <i>Key Concept</i> 83, 84 <i>Practice and Problem Solving</i> 72 #26-#40, 73 #44-#46, 87</p> <p>Teacher Edition: AE 71</p>
MA 12.3.3.g Solve linear equations and inequalities including absolute value	<p>Student Edition: 27-29 Examples, 34 Example 1, 35 Examples, 36 Example 4, 70 Example 2 <i>Check Your Understanding</i> 30, 36 <i>Key Concept</i> 27, 34 <i>Practice and Problem Solving</i> 30-31, 72 #25, #42-#43, 37-38 <i>Skills Review</i> 74 #69-#76 <i>Spiral Review</i> 89 #51-#53 <i>Study Guide and Review</i> 51-52</p> <p>Teacher Edition: AE 28, 29, 34, 35, 36; DI 39</p>
MA 12.3.3.h Identify and explain the properties used in solving equations and inequalities	<p>Student Edition: 12-13 Examples, 19-21 Examples, 34-36 Examples <i>Check Your Understanding</i> 22 #7-#8, 36 <i>Concept Summary</i> 12 <i>H.O.T. Problems</i> 16 #57, 24 #65 <i>Key Concept</i> 19, 33, 34 <i>Practice and Problem Solving</i> 14 #30-#35, 22 #30-#33, 37-38</p> <p>Teacher Edition: AE 13; DI 13</p>
MA 12.3.3.i Solve quadratic equations (e.g., factoring, graphing, quadratic formula)	<p>Student Edition: 259, 260-262 Examples, 268-271 Examples, 292, 293-296 Examples <i>Check Your Understanding</i> 263, 272 <i>Concept Summary</i> 269, 297 <i>Graphing Technology Lab</i> 267, 291 <i>Key Concept</i> 260, 269, 293, 296 <i>Practice and Problem Solving</i> 264-265, 272-274, 280 #36-#41 <i>Study Guide and Review</i> 322-323 <i>Why?</i> 268</p> <p>Teacher Edition: AE 261, 269, 270, 271; DI 275; FM 261; T 268</p>

STANDARDS	PAGE REFERENCES
MA 12.3.3.j Add, subtract, and simplify rational expressions	<p>Student Edition: 562-564 Examples <i>Check Your Understanding</i> 565 <i>H.O.T. Problems</i> 567 <i>Practice and Problem Solving</i> 565-567 <i>Study Guide and Review</i> 606 9-2 <i>Why?</i> 562</p> <p>Teacher Edition: AE 563, 564; DI 566</p>
MA 12.3.3.k Multiply, divide, and simplify rational expressions	<p>Student Edition: 555-557 Examples <i>Check Your Understanding</i> 557 <i>H.O.T. Problems</i> 560 <i>Key Concept</i> 555 <i>Practice and Problem Solving</i> 558-560 <i>Study Guide and Review</i> 606 9-1</p> <p>Teacher Edition: AE 555, 556, 557; DI 561; FM 555</p>
MA 12.3.3.l Evaluate polynomial and rational expressions and expressions containing radicals and absolute values at specified values of their variables	<p>Student Edition: 27-29 Examples, 358-360 Examples, 368-371 Examples, 440-442 Examples, 555-557 Examples <i>Algebra Lab</i> 356 <i>Check Your Understanding</i> 30, 361 #5-#13, 372, 443, 449 #5-#9 <i>Graphing Technology Lab</i> 365-366 <i>H.O.T. Problems</i> 374, 444 <i>Practice and Problem Solving</i> 30-31, 361-363, 372-374, 443-444 <i>Why?</i> 368</p> <p>Teacher Edition: AE 28, 29, 555</p>
MA 12.3.3.m Derive and use the formulas for the general term and summation of finite arithmetic and geometric series	<p>Student Edition: 688-691 Examples, 696-699 Examples <i>Algebra Lab</i> 703-704 <i>Check Your Understanding</i> 692 <i>H.O.T. Problems</i> 694, 701 <i>Key Concept</i> 688, 690, 691, 696, 699 <i>Practice and Problem Solving</i> 692-694, 700-701 <i>Why?</i> 688</p> <p>Teacher Edition: AE 689, 690; DI 693; FM 689; T 696</p>

STANDARDS	PAGE REFERENCES
<p>MA 12.3.3.n Combine functions by composition, as well as by addition, subtraction, multiplication, and division</p>	<p>Student Edition: 20 Example 5, 143 Example 1, 268-270 Examples, 293-295 Examples, 368-371 Examples, 453 Example 1, 454 Example 2 <i>Algebra Lab</i> 301-302 <i>Check Your Understanding</i> 22 #15-#18, 146 #2-#7, 272, 297, 372 <i>Mid-Chapter Quiz</i> 26 #13 <i>Practice and Problem Solving</i> 23 #39-#42, 147 #15-#26, 272-274, 298-299, 372-374</p> <p>Teacher Edition: AE 20, 294</p>
<p>MA 12.3.3.o Solve an equation involving several variables for one variable in terms of the others</p>	<p>Student Edition: 21 Example 6 <i>Check Your Understanding</i> 22 #19-#20 <i>H.O.T. Problems</i> 24 #62-#63 <i>Practice and Problem Solving</i> 23 #45-#50</p> <p>Teacher Edition: AE 21; DI 21</p>
<p>MA 12.3.3.p Analyze and solve systems of two linear equations in two variables algebraically and graphically</p>	<p>Student Edition: 135-137, 144-145, 231-232 <i>Check Your Understanding</i> 138, 146 <i>Concept Summary</i> 146 <i>Graphing Technology Lab</i> 142 <i>H.O.T. Problems</i> 140 <i>Key Concept</i> 143 <i>Practice and Problem Solving</i> 139-140, 147-149 <i>Why?</i> 135, 143</p> <p>Teacher Edition: A 150; AE 136, 137, 138, 232; DI 141; FM 137</p>

STANDARDS	PAGE REFERENCES
<p>MA 12.4 Students will communicate data analysis/probability concepts using multiple representations to reason, solve problems, and make connections within mathematics and across disciplines.</p>	
<p>MA 12.4.1 Display and Analysis: Students will formulate a question and design a survey or an experiment in which data is collected and displayed in a variety of formats, then select and use appropriate statistical methods to analyze the data.</p>	
<p>MA 12.4.1.a Interpret data represented by the normal distribution and formulate conclusions</p>	<p>Student Edition: 773-775 Examples <i>Algebra Lab</i> 779 <i>Check Your Understanding</i> 775 <i>H.O.T. Problems</i> 777 <i>Key Concept</i> 773, 774 <i>Practice and Problem Solving</i> 776-777 <i>Spiral Review</i> 784 #38-#41 <i>Study Guide and Review</i> 797 12-5 <i>Why?</i> 773</p> <p>Teacher Edition: AE 774, 775; DI 778; FM 774</p>
<p>MA 12.4.1.b Compute, identify, and interpret measures of central tendency (mean, median, mode) when provided a graph or data set</p>	<p>Student Edition: 752 Example 1, 754-755 Example 4 <i>Algebra Lab</i> 99-100, 785 <i>Check Your Understanding</i> 755 #1-#4 <i>H.O.T. Problems</i> 757 #28, #31-#32 <i>Key Concept</i> 752 <i>Practice and Problem Solving</i> 756 #11-#12 <i>Spiral Review</i> 763 #32 <i>Study Guide and Review</i> 797 12-5 <i>Why?</i> 752</p> <p>Teacher Edition: AE 753</p>
<p>MA 12.4.1.c Explain how sample size and transformations of data affect measures of central tendency</p>	<p>Student Edition: 753 <i>Check Your Understanding</i> 755 #5-#8, #10 <i>Key Concept</i> 753 <i>Practice and Problem Solving</i> 756 #13-#20, #23-#24, 757 <i>Spiral Review</i> 763 #32 <i>Study Guide and Review</i> 797 12-5</p> <p>Teacher Edition: AE 753, 754; DI 753</p>

STANDARDS	PAGE REFERENCES
<p>MA 12.4.1.d Describe the shape and determine spread (variance, standard deviation) and outliers of a data set</p>	<p>Student Edition: 93 Example 1, 754-755 <i>Algebra Lab</i> 99-100 <i>Check Your Understanding</i> 755 #9-#10 <i>Concepts and Skills Bank</i> 1006 <i>Key Concept</i> 754 <i>Practice and Problem Solving</i> 97 #11, 756 #21-#24, 757 <i>Spiral Review</i> 763 #32 <i>Study Guide and Review</i> 797 12-5</p> <p>Teacher Edition: AE 754; DI 758; TT 756</p>
<p>MA 12.4.1.e Explain how statistics are used or misused in the world</p>	<p>Student Edition: 745-747 <i>Check Your Understanding</i> 748 <i>Graphing Technology Lab</i> 751 <i>H.O.T. Problems</i> 749 <i>Practice and Problem Solving</i> 748-749 <i>Why?</i> 745</p> <p>Teacher Edition: A 750, 751; AE 746, 747, 748; DI 747; FM 746; T745; TT 746</p>
<p>MA 12.4.1.f Create scatter plots, analyze patterns, and describe relationships in paired data</p>	<p>Student Edition: 93 Example 1, 94-95 Example 2 <i>Algebra Lab</i> 99-100, 785 <i>Check Your Understanding</i> 95 <i>Graphing Technology Lab</i> 319 <i>H.O.T. Problems</i> 97 <i>Practice and Problem Solving</i> 96-97</p> <p>Teacher Edition: AE 93, 94, 95; TT 95</p>
<p>MA 12.4.1.g Explain the impact of sampling methods, bias, and the phrasing of questions asked during data collection and the conclusions that can rightfully be made</p>	<p>Student Edition: 745-747 <i>Check Your Understanding</i> 748 <i>Graphing Technology Lab</i> 751 <i>H.O.T. Problems</i> 749 <i>Practice and Problem Solving</i> 748-749 <i>Why?</i> 745</p> <p>Teacher Edition: A 750, 751; AE 746, 747, 748; DI 747; FM 746; T745; TT 746</p>

STANDARDS	PAGE REFERENCES
MA 12.4.1.h Explain the differences between randomized experiment and observational studies	<p>Student Edition: 759-760, 764-767 <i>Algebra Lab</i> 785 <i>Check Your Understanding</i> 761, 767 <i>H.O.T. Problems</i> 762, 770 <i>Key Concept</i> 759, 764 <i>Practice and Problem Solving</i> 761-762, 768-770 <i>Why?</i> 759, 764</p> <p>Teacher Edition: AE 760, 765, 766, 767 DI 763; T 759, 764; WO 771</p>
MA 12.4.2 Predictions and Inferences: Students will develop and evaluate inferences to make predictions.	
MA 12.4.2.a Compare data sets and evaluate conclusions using graphs and summary statistics	<p>Student Edition: 93 Example 1, 94-95 Example 2, 752-755, 773-775 Examples <i>Algebra Lab</i> 99-100, 779 <i>Check Your Understanding</i> 775 <i>Graphing Technology Lab</i> 90, 751 <i>H.O.T. Problems</i> 757 #33, 770 #26, 777 <i>Practice and Problem Solving</i> 97, 776-777 <i>Why?</i> 773</p> <p>Teacher Edition: AE 775</p>
MA 12.4.2.b Support inferences with valid arguments	<p>Student Edition: 93 Example 1, 94-95 Example 2 <i>Algebra Lab</i> 99-100 <i>H.O.T. Problems</i> 97 #15, 777 #22 <i>Practice and Problem Solving</i> 97 <i>Spiral Review</i> 758 #38</p> <p>Teacher Edition: AE 93; T 92</p>
MA 12.4.2.c Develop linear equations for linear models to predict unobserved outcomes using regression line and correlation coefficient	<p>Student Edition: 93 Example 1, 94-95 Example 2 <i>Algebra Lab</i> 99-100, 785 <i>Check Your Understanding</i> 95 <i>Graphing Technology Lab</i> 319 <i>H.O.T. Problems</i> 97 <i>Practice and Problem Solving</i> 96-97</p> <p>Teacher Edition: AE 93, 94, 95</p>

STANDARDS	PAGE REFERENCES
MA 12.4.2.d Recognize when arguments based on data confuse correlation with causation	<p>Student Edition: 94, 747 Example 5 <i>Check Your Understanding</i> 748 #8-#9 <i>H.O.T. Problems</i> 97 #13 <i>Key Concept</i> 92 <i>Practice and Problem Solving</i> 96 #3-#6, 749 #22-#25</p> <p>Teacher Edition: AE 94, 48</p>
MA 12.4.3 Probability: Students will apply and analyze concepts of probability.	
MA 12.4.3.a Construct a sample space and a probability distribution	<p>Student Edition: 764-767 Examples, 786-789 Examples <i>Algebra Lab</i> 779, 785 <i>Check Your Understanding</i> 767, 790 <i>H.O.T. Problems</i> 770, 792 <i>Practice and Problem Solving</i> 768-770, 790-792</p> <p>Teacher Edition: AE 765, 766, 787, 788, 789; DI 771; T 764; WO 771</p>
MA 12.4.3.b Identify dependent and independent events and calculate their probabilities	<p>Student Edition: P9-P10 Examples <i>Algebra Lab</i> 785 <i>Concepts and Skills Bank</i> 998, 1000 #1-#2 <i>Exercises</i> P10-P11</p> <p>Teacher Edition: AE P9, P10, P12, 998, 1000</p>
MA 12.4.3.c Use the appropriate counting techniques to determine the probability of an event (e.g., combinations, permutations)	<p>Student Edition: P9-P10 Examples, P12-P14 Examples, 764-765 Examples <i>Check Your Understanding</i> 767 #1-#3 <i>Exercises</i> P10-P11, P14 <i>Key Concept</i> P12, P13 <i>Practice and Problem Solving</i> 768 #6-#12 <i>Reading Math</i> P13 <i>Skills Review</i> 758 #42-#45</p> <p>Teacher Edition: AE P9, P10, P12, P13, P14, 765, 766; TT P10, P13; WO P13</p>

STANDARDS	PAGE REFERENCES
MA 12.4.3.d Analyze events to determine if they are mutually exclusive	<p>Student Edition: <i>Concepts and Skills Bank</i> 999, 1000 #9-#19</p> <p>Teacher Edition: AE 999</p>
MA 12.4.3.e Determine the relative frequency of a specified outcome of an event to estimate the probability of the outcome	<p>Estimates of relative frequencies can be discussed along with the following examples.</p> <p>Student Edition: 760, 766 Example 4 <i>Check Your Understanding</i> 761 #5-#6, 767 #4 <i>Practice and Problem Solving</i> 761 #11-#12, 762 #19, 768 #13-#14</p> <p>Teacher Edition: AE 760, 766</p>