



# Algebra 2

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STANDARDS	PAGE REFERENCES
<b>Standard: 1. Number Sense, Properties, and Operations</b>	
<b>Number Sense, Properties, and Operations</b>	
<b>1. The complex number system includes real numbers and imaginary numbers</b>	
<p>a. Show that between any two rational numbers there are an infinite number of rational numbers, and that between any two irrational numbers there are also an infinite number of irrational numbers</p>	<p>This objective can be discussed further after students have reviewed lesson 1-2. <b>Student Edition:</b> <i>H.O.T Problems</i> 16 #58-#60</p>
<p>b. Express the square root of a negative number using imaginary numbers</p>	<p><b>Student Edition:</b> <i>Check Your Understanding</i> 280 #1-#2 <i>Example</i> 276, 295 <i>Mid-Chapter Quiz</i> 283 #17 <i>Practice and Problem Solving</i> 280 #18-#21 <i>Pure Imaginary Numbers</i> 276 <i>Spiral Review</i> 300 #57 <i>Study Guide and Review</i> 322 5-4 <b>Teacher Edition:</b> AE 277</p>

STANDARDS	PAGE REFERENCES
<p><b>Are fluent with basic numerical and symbolic facts and algorithms, and are able to select and use appropriate (mental math, paper and pencil, and technology) methods based on an understanding of their efficiency, precision, and transparency</b></p>	
<p><b>2. Formulate, represent, and use algorithms with real numbers flexibly, accurately, and efficiently</b></p>	
<p>a. Use appropriate computation methods that encompass estimation and calculation</p>	<p><b>Student Edition:</b>  <i>Algebra Lab</i> 301, 340  <i>Check Your Progress</i> 93  <i>Check Your Understanding</i> 22 #9-#18  <i>Example</i> 93-94, 278-279, 341, 453-454  <i>Practice and Problem Solving</i> 23, 96-97  <i>Skills Review</i> 166  <i>Spreadsheet Lab</i> 532</p> <p><b>Teacher Edition:</b>            AE 94, 95, 278, 279, 432, 434, 454-455</p>
<p>b. Use technology to perform operations (addition, subtraction, multiplication, and division) on numbers written in scientific notation</p>	<p>Technology can be used with the following examples.</p> <p><b>Student Edition:</b>            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><b>Teacher Edition:</b>            AE 997; T 333; TT 997</p>
<p>c. Describe factors affecting take-home pay and calculate the impact (PFL)</p>	<p>This can be found in Glencoe's <i>Mathematics For Business and Personal Finance</i> © 2010.</p>
<p>d. Design and use a budget, including income (net take-home pay) and expenses (mortgage, car loans, and living expenses) to demonstrate how living within your means is essential for a secure financial future (PFL)</p>	<p>This can be found in Glencoe's <i>Mathematics For Business and Personal Finance</i> © 2010.</p>

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<b>3. Systematic counting techniques are used to describe and solve problems</b>	
<p>a. Use combinatorics (Fundamental Counting Principle, permutations and combinations) to solve problems in real-world contexts</p>	<p><b>Student Edition:</b>  <i>Check Your Understanding</i> 767 #1-#3  <i>Example</i> P9-P10, P12-P14, 764-765  <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><b>Teacher Edition:</b>            AE P9, P10, P12, P13, P14, 765, 766; TT P10, P13; WO P13</p>
<b>Standard: 2. Patterns, Functions, and Algebraic Structures</b>	
<b>Make sound predictions and generalizations based on patterns and relationships that arise from numbers, shapes, symbols, and data</b>	
<b>1. Functions model situations where one quantity determines another and can be represented algebraically, graphically, and using tables</b>	
<p>a. Determine* when a relation is a function using a table, a graph, or an equation</p>	<p><b>Student Edition:</b>  <i>Algebra Lab</i> 68  <i>Check Your Understanding</i> 64  <i>Example</i> P5, 61-64, 69  <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><b>Teacher Edition:</b>            AE P5, 62, 63, 64, 70; DI 67</p>
<p>b. Demonstrate the relationship between all forms of linear functions using point slope, slope-intercept, and standard form of a line</p>	<p><b>Student Edition:</b>  <i>Check Your Understanding</i> 71 #6-#11, 86  <i>Example</i> 70, 84-86  <i>H.O.T Problems</i> 88  <i>Key Concept</i> 70, 83, 84  <i>Mid-Chapter Quiz</i> 91 #8-#11, #20-#23  <i>Practice and Problem Solving</i> 72 26-#34, 73 #44-#46, 87-88</p> <p><b>Teacher Edition:</b>            AE 71, 84, 85, 86; FM 85</p>

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<p>c. Represent* linear, quadratic, absolute value, power, exponential, logarithmic, rational, trigonometric (sine and cosine), and step functions in a table, graph, and equation and convert from one representation to another</p>	<p><b>Student Edition:</b>  <i>Algebra Lab</i> 75, 99-100, 356  <i>Check Your Understanding</i> 95  <i>Example</i> 76, 84, 93, 357, 359, 536  <i>Graphing Technology Lab</i> 90, 376, 423  <i>H.O.T Problems</i> 88 #39-#42  <i>Practice and Problem Solving</i> 80 #23-#28, 87, 96-97  <i>Why?</i> 409</p> <p><b>Teacher Edition:</b>            AE 78, 84, 86, 93, 359, 536; DI 411</p>
<p>d. Determine the inverse (expressed graphically or in tabular form) of a function from a graph or table</p>	<p><b>Student Edition:</b>  <i>Check Your Understanding</i> 420  <i>Example</i> 417-419  <i>Graphing Technology Lab</i> 423  <i>H.O.T Problems</i> 421  <i>Practice and Problem Solving</i> 420-421  <i>Spiral Review</i> 430  <i>Study Guide and Review</i> 463 7-2  <i>Why?</i> 417</p> <p><b>Teacher Edition:</b>            AE 418, 419; DI 419, 422; FM 872</p>
<p>e. Categorize sequences as arithmetic, geometric, or neither and develop formulas for the general terms related to arithmetic and geometric sequences</p>	<p><b>Student Edition:</b>            681, 683, 690  <i>Check Your Understanding</i> 685, 692, 699  <i>Example</i> 681-684, 689-691, 696-698  <i>H.O.T Problems</i> 686, 694, 701  <i>Key Concept</i> 681, 688, 696  <i>Practice and Problem Solving</i> 685-686, 692-694, 700-701  <i>Spreadsheet Lab</i> 720  <i>Study Guide and Review</i> 733-735  <i>Why?</i> 688</p> <p><b>Teacher Edition:</b>            AE 682, 683, 684, 689, 690, 691, 697, 715; DI 687, 693; FM 699; T 688; WO 687</p>

STANDARDS	PAGE REFERENCES
<p><b>Make sound predictions and generalizations based on patterns and relationships that arise from numbers, shapes, symbols, and data</b></p>	
<p><b>2. Graphs and tables are used to describe the qualitative behavior of common types of functions</b></p>	
<p>a. Evaluate* a function at a given point in its domain given an equation (including function notation), a table, and a graph</p>	<p><b>Student Edition:</b>  <i>Example</i> 64, 70, 71  <i>H.O.T Problems</i> 67 #36  <i>Mid-Chapter Quiz</i> 91 #3-#5  <i>Practice and Problem Solving</i> 65 #21-#22, #24-#32  <i>Spiral Review</i> 82 #48-#50, 107 #53-#55  <i>Study Guide and Review</i> 123 2-1</p> <p><b>Teacher Edition:</b>            AE 64</p>
<p>b. Identify* the domain and range of a function given an equation (including function notation), a table, and a graph</p>	<p><b>Student Edition:</b>  <i>Check Your Understanding</i> 64, 427, 572  <i>Example</i> P4, P5, 61, 63, 424, 571  <i>H.O.T. Problems</i> 66  <i>Key Concept</i> 62  <i>Mid-Chapter Quiz</i> 91 #1  <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><b>Teacher Edition:</b>            AE P5, 62, 63, 64, 425, 570; TT 426</p>
<p>c. Identify* intercepts, zeros (or roots), maxima, minima, and intervals of increase and decrease, and asymptotes of a function given an equation (including function notation), a table, and a graph</p>	<p><b>Student Edition:</b>            259, 358  <i>Algebra Lab</i> 75  <i>Check Your Understanding</i> 361 #9-#12  <i>Concept Summary</i> 383  <i>Example</i> 71, 358-359, 384-387, 391-393  <i>H.O.T. Problems</i> 365 #52  <i>Key Concept</i> 358  <i>Mid-Chapter Quiz</i> 91 #12-#13  <i>Practice and Problem Solving</i> 72 #35-#40, 73 #47-#49, 264 #30-#32, 361 #14-#21, #23-#26, 394 19-#38</p> <p><b>Teacher Edition:</b>            AE 71, 261, 386, 387, 392; T 259; TT392</p>

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<p>d. Make qualitative statements about the rate of change of a function, based on its graph or table</p>	<p><b>Student Edition:</b>  <i>Algebra Lab</i> 311, 356  <i>Check Your Understanding</i> 79 #1-#3, #7-#8  <i>Example</i> 76-77, 94-95  <i>Mid-Chapter Quiz</i> 91 #14  <i>Practice and Problem Solving</i> 79, 80 #11, #18-#28, 81 #30, #35, 105 #20-#29  <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><b>Teacher Edition:</b>            AE 77, 129</p>
<p><b>3. Parameters influence the shape of the graphs of functions</b></p>	
<p>a. Apply* transformations (translation, reflection, dilation) to a parent function, <math>f(x)</math></p>	<p><b>Student Edition:</b>            209  <i>Algebra Lab</i> 218-219  <i>Check Your Understanding</i> 213-214  <i>Example</i> 210-211, 213, 417-419  <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><b>Teacher Edition:</b>            AE 210, 211, 212, 213, 418; DI 216, 217; FM 212; T 209; TT 210; WO 212</p>

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<p>b. Interpret the results of these transformations verbally, graphically, and symbolically</p>	<p><b>Student Edition:</b>  209  <i>Algebra Lab</i> 218-219  <i>Check Your Understanding</i> 213-214  <i>Example</i> 210-211, 213, 417-419  <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><b>Teacher Edition:</b>  AE 210, 211, 212, 213, 418; DI 216, 217; FM 212;  T 209; TT 210; WO 212</p>
<p><b>4. Expressions , equations, and inequalities can be expressed in multiple, equivalent forms</b></p>	
<p>a. Perform and justify steps in generating equivalent expressions by identifying properties used including the commutative, associative, inverse, identity, and distributive properties</p>	<p><b>Student Edition:</b>  <i>Check Your Understanding</i> 14 #5-#8, 22 #7-#18, 36  <i>Concept Summary</i> 12  <i>Example</i> 13, 19-21, 34-36  <i>H.O.T. Problems</i> 16 #57, 24 #65  <i>Key Concept</i> 19, 33, 34  <i>Practice and Problem Solving</i> 14 #26-#29, 15 #46-#49, 22 #30-#33, 37-38</p> <p><b>Teacher Edition:</b>  AE 13, 20</p>
<p>b. Apply the properties of positive and negative rational exponents to generate equivalent algebraic expressions including those involving nth roots</p>	<p><b>Student Edition:</b>  <i>Check Your Understanding</i> 337 #1-#4, #9-#14, 449 #10-#15  <i>Concept Summary</i> 333  <i>Example</i> 334-336, 446-449  <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><b>Teacher Edition:</b>  AE 334, 335, 336, 449 DI 339; FM 334; TT 335</p>

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<p>c. Solve equations for one variable in terms of the others</p>	<p><b>Student Edition:</b>  <i>Check Your Understanding</i> 22 #19-#20  <i>Example</i> 21  <i>H.O.T. Problems</i> 24 #62-#63  <i>Practice and Problem Solving</i> 23 #45-#50</p> <p><b>Teacher Edition:</b>            AE 21; DI 21</p>
<p><b>5. Solutions to equations, inequalities and systems of equations are found using a variety of tools</b></p>	
<p>a. Find* solutions to quadratic and cubic equations and linear inequalities by using appropriate algebraic methods such as factoring, completing the square, graphing or using the quadratic formula</p>	<p><b>Student Edition:</b>            259, 292  <i>Check Your Understanding</i> 263, 272  <i>Concept Summary</i> 269, 297  <i>Example</i> 260-262, 268-271, 293-296  <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><b>Teacher Edition:</b>            AE 261, 269, 270, 271; DI 275; FM 261; T 268</p>
<p>b. Find* solutions to equations involving power, exponential, rational and radical functions</p>	<p><b>Student Edition:</b>  <i>Algebra Lab</i> 356  <i>Check Your Understanding</i> 30, 337, 345, 361 #5-#13, 372, 443, 449 #5-#9  <i>Concept Summary</i> 333  <i>Example</i> 27-29, 358-360, 368-371, 440-442, 555-557  <i>Graphing Technology Lab</i> 365-366  <i>H.O.T. Problems</i> 338, 374, 444  <i>Key Concept</i> 343  <i>Practice and Problem Solving</i> 30-31, 337-338, 345-346, 361-363, 372-374, 443-444  <i>Why?</i> 333, 341, 368</p> <p><b>Teacher Edition:</b>            AE 28, 29, 334, 335, 336, 343, 344, 555; DI 339; T 333</p>

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<p>c. Solve* systems of linear equations and inequalities with two variables</p>	<p><b>Student Edition:</b>  135  <i>Check Your Understanding</i> 138, 146  <i>Concept Summary</i> 146  <i>Example</i> 135-137, 143-145, 231-232  <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><b>Teacher Edition:</b>  A 150; AE 136, 137, 138, 232; DI 141; FM 137</p>
<p><b>6. Quantitative relationships in the real world can be modeled and solved using functions</b></p>	
<p>a. Represent, solve*, and interpret problems in various contexts using linear, quadratic, and exponential functions</p>	<p><b>Student Edition:</b>  <i>Check Your Understanding</i> 163 #7  <i>Example</i> 118, 136, 143, 162, 271, 279, 314, 335-336, 553-556  <i>Graphing Technology Lab</i> 142, 158, 236, 303, 319  <i>H.O.T. Problems</i> 140, 274, 289, 338, 389, 560  <i>Practice and Problem Solving</i> 139 #23-#24, 140, 273, 289, 337-338, 558-559  <i>Why?</i> 135, 160, 268, 284, 383, 553</p> <p><b>Teacher Edition:</b>  AE 136, 144, 271, 275, 277, 278, 385, 556; DI 275; T 268</p>
<p>b. Represent, solve*, and interpret problems involving direct and inverse variations and a combination of direct and inverse variation</p>	<p><b>Student Edition:</b>  <i>Check Your Understanding</i> 590  <i>Graphing Technology Lab</i> 90  <i>Example</i> 587, 588-589  <i>H.O.T. Problems</i> 592  <i>Key Concept</i> 586, 588  <i>Practice and Problem Solving</i> 590-592  <i>Study Guide and Review</i> 608 9-5  <i>Why?</i> 586</p> <p><b>Teacher Edition:</b>  AE 587, 588, 589; EC 90; FM 587; T 90, 586</p>

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c. Analyze* the impact of interest rates on a personal financial plan (PFL)	This can be found in Glencoe's <i>Mathematics For Business and Personal Finance</i> © 2010.
d. Evaluate* the costs and benefits of credit (PFL)	This can be found in Glencoe's <i>Mathematics For Business and Personal Finance</i> © 2010.
e. Analyze various lending sources, services, and financial institutions (PFL)	This can be found in Glencoe's <i>Mathematics For Business and Personal Finance</i> © 2010.
<b>Standard: 3. Data Analysis, Statistics, and Probability</b>	
<b>Solve problems and make decisions that depend on understanding, explaining, and quantifying the variability in data</b>	
<b>1. Statistical methods take variability into account, supporting informed decision-making through quantitative studies designed to answer specific questions</b>	
a. Formulate appropriate research questions that can be answered with statistical analysis	<b>Student Edition:</b> <i>Check Your Understanding</i> 748 <i>Example</i> 745-747 <i>H.O.T. Problems</i> 749 <i>Practice and Problem Solving</i> 748-749 <i>Why?</i> 745 <b>Teacher Edition:</b> A 750; AE 746, 747, 748; DI 747; T745; TT 746
b. Determine appropriate data collection methods to answer a research question	<b>Student Edition:</b> <i>Algebra Lab</i> 785 <i>Check Your Understanding</i> 790 #1 <i>Example</i> 786 <i>Graphing Technology Lab</i> 751 <i>Practice and Problem Solving</i> 790 #7-#9 <i>Study Guide and Review</i> 798 <i>Why?</i> 752 <b>Teacher Edition:</b> A 751; AE 787; DI 753; T 751, 785

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<p>c. Explain how data might be analyzed to provide answers to a research question</p>	<p><b>Student Edition:</b>  <i>Algebra Lab</i> 99-100, 779  <i>Check Your Understanding</i> 755 #10, 761 #5-#6, 775  <i>Example</i> 93, 94-95, 752-755, 760, 773-775  <i>Graphing Technology Lab</i> 751  <i>H.O.T. Problems</i> 757 #33, 777, 783 #32  <i>Practice and Problem Solving</i> 97, 761 #11, 762 #19, 776-777  <i>Graphing Technology Lab</i> 751  <i>Why?</i> 752, 759, 773  <b>Teacher Edition:</b>            AE 775</p>
<p><b>2. The design of an experiment or sample survey is of critical importance to analyzing the data and drawing conclusions</b></p>	
<p>a. Identify the characteristics of a well designed and well-conducted survey</p>	<p><b>Student Edition:</b>  <i>Check Your Understanding</i> 748  <i>Example</i> 745-747  <i>H.O.T. Problems</i> 749  <i>Practice and Problem Solving</i> 748-749  <i>Why?</i> 745  <b>Teacher Edition:</b>            A 750; AE 746, 747, 748; DI 747; T745; TT 746</p>
<p>b. Identify the characteristics of a well designed and well-conducted experiment</p>	<p><b>Student Edition:</b>  <i>Algebra Lab</i> 785  <i>Check Your Understanding</i> 790 #1  <i>Example</i> 786  <i>Graphing Technology Lab</i> 751  <i>Practice and Problem Solving</i> 790 #7-#9  <i>Study Guide and Review</i> 798  <i>Why?</i> 752  <b>Teacher Edition:</b>            A 751; AE 787; DI 753; T 751, 785</p>
<p>c. Differentiate between the inferences that can be drawn in experiments versus observational studies</p>	<p><b>Student Edition:</b>            746, 780  <i>Check Your Understanding</i> 748 #4-#7  <i>Example</i> 746-747, 780  <i>Practice and Problem Solving</i> 749 #16-#21  <i>Why?</i> 780  <b>Teacher Edition:</b>            AE 746, 781</p>

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**3. Visual displays and summary statistics condense the information in data sets into usable knowledge**

<p>a. Identify and choose appropriate ways to summarize numerical or categorical data using tables, graphical displays, and numerical summary statistics (describing shape, center and spread) and accounting for outliers when appropriate</p>	<p><b>Student Edition:</b>  <i>Algebra Lab</i> 99-100  <i>Check Your Understanding</i> 755 #9-#10  <i>Concepts and Skills Bank</i> 1006  <i>Example</i> 93, 754-755, 773-775  <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  <i>Why?</i> 773  <b>Teacher Edition:</b>            AE 754; DI 758; TT 756</p>
<p>b. Define and explain how sampling distributions (developed through simulation) are used to describe the sample-to-sample variability of sample statistics</p>	<p><b>Student Edition:</b>  <i>Check Your Understanding</i> 775 #1  <i>Example</i> 774-775  <i>H.O.T. Problems</i> 777 #20  <i>Practice and Problem Solving</i> 776-777  <i>Why?</i> 773  <b>Teacher Edition:</b>            AE 774; T 773</p>
<p>c. Describe the relationship between two categorical variables using percents</p>	<p><b>Student Edition:</b>  <i>Algebra Lab</i> 779  <i>Check Your Understanding</i> 775 #2-#3  <i>Example</i> 774  <i>Practice and Problem Solving</i> 776-777 #10-#15  <i>Spiral Review</i> 784 #38-#41  <b>Teacher Edition:</b>            AE 774, 775</p>

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<p>d. When the relationship between two numerical variables is reasonably linear, apply* the least-squares criterion for line fitting, use Pearson's correlation coefficient as a measure of strength, and interpret the slope and y-intercept in the context of the problem</p>	<p>This can be found in Glencoe's <i>Algebra 1</i> © 2010.</p>
<p><b>4. Randomness is the foundation for using statistics to draw conclusions when testing a claim or estimating plausible values for a population characteristic</b></p>	
<p>a. Define and explain the meaning of significance (both practical and statistical)</p>	<p>This can be found in Glencoe's <i>Elementary Statistics</i> © 2009.</p>
<p>b. Explain the role of p-values in determining statistical significance</p>	<p>This can be found in Glencoe's <i>Elementary Statistics</i> © 2009.</p>
<p>c. Determine the margin of error associated with an estimate of a population characteristic</p>	<p><b>Student Edition:</b>  <i>Check Your Understanding</i> 755 #9  <i>Example</i> 753  <i>Key Concept</i> 753  <i>Practice and Problem Solving</i> 756 #21-#22  <i>Study Guide and Review</i> 795 12-2  <b>Teacher Edition:</b>            AE 753</p>
<p><b>5. Probability models outcomes for situations in which there is inherent randomness, quantifying the degree of certainty in terms of relative frequency of occurrence</b></p>	
<p>a. Develop* simulations that demonstrate probability as a long-run relative frequency</p>	<p>Relative frequencies can be discussed along with the following examples.  <b>Student Edition:</b>  <i>Check Your Understanding</i> 761 #5-#6, 767 #4  <i>Example</i> 760-766  <i>Practice and Problem Solving</i> 761 #11-#12, 762 #19, 768 #13-#14  <b>Teacher Edition:</b>            AE 760, 766</p>

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<p>b. Apply and solve problems using the concepts of independence and conditional probability</p>	<p><b>Student Edition:</b>  <i>Algebra Lab</i> 779, 785  <i>Check Your Understanding</i> 761, 767, 790  <i>Example</i> 760, 764-767, 786-789  <i>H.O.T. Problems</i> 762, 770  <i>Key Concept</i> 759  <i>Practice and Problem Solving</i> 761-762, 768-770, 790  <i>Why?</i> 759</p> <p><b>Teacher Edition:</b>            AE 787, 788, 789; DI 771; SQ 759; T 764; WO 771</p>
<p>c. Apply and solve problems using the concept of mutually exclusive properties when combining probabilities</p>	<p><b>Student Edition:</b>  <i>Concepts and Skills Bank</i> 999, 1000 #9-#19</p> <p><b>Teacher Edition:</b>            AE 999</p>
<p>d. Evaluate* and interpret probabilities using a normal distribution</p>	<p><b>Student Edition:</b>  <i>Algebra Lab</i> 779  <i>Check Your Understanding</i> 775  <i>Example</i> 773-775  <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><b>Teacher Edition:</b>            AE 774, 775; DI 778; FM 774</p>
<p>e. Find* and interpret the expected value and standard deviation of a discrete random variable X</p>	<p><b>Student Edition:</b>  <i>Algebra Lab</i> 779  <i>Check Your Understanding</i> 755, 775 #1-#2  <i>Example</i> 754-755, 773-774  <i>Key Concept</i> 754, 773  <i>Practice and Problem Solving</i> 756, 776 #1-#9</p> <p><b>Teacher Edition:</b>            AE 753, 754</p>
<p>f. Analyze* the cost of insurance as a method to offset the risk of a situation (PFL)</p>	<p>This can be found in Glencoe's <i>Mathematics For Business and Personal Finance</i> © 2010.</p>

STANDARDS	PAGE REFERENCES
<b>Standard: 4. Shape, Dimension, and Geometric Relationships</b>	
<b>Make claims about relationships among numbers, shapes, symbols, and data and defend those claims by relying on the properties that are the structure of mathematics</b>	
<b>1. Attributes of two- and three-dimensional objects are measurable and can be quantified</b>	
a. Calculate (or estimate when appropriate) the perimeter and area of a two-dimensional irregular shape	<b>Student Edition:</b> <i>Algebra Lab</i> 703-704 <i>Practice and Problem Solving</i> 394 #39, 620 #37 <i>Standardized Test Practice</i> 613 #8, 771 #31
b. Justify, interpret, and apply the use of formulas for the surface area, and volume of cones, pyramids, and spheres including real-world situations	<b>Student Edition:</b> <i>Check Your Understanding</i> 393 #3, 557 #12 <i>Example</i> 6 <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 <b>Teacher Edition:</b> AE 21, 55, 393; MR 9
c. Solve for unknown quantities in relationships involving perimeter, area, surface area, and volume	<b>Student Edition:</b> <i>Mid-Chapter Quiz</i> 26 #4, #19 <i>Practice and Problem Solving</i> 9 #40 <i>Practice Test</i> 53 #21 <i>Spiral Review</i> 25 #73, 32 #68, 39 #59 <i>Standardized Test Practice</i> 725 #41 <i>Study Guide and Review</i> 50 1-1, 51 1-3
d. Apply the effect of dimensional change, utilizing appropriate units and scales in problem-solving situations involving perimeter, area, and volume	<b>Student Edition:</b> <i>Exercises</i> P16 #10, P18 #16 <i>Spiral Review</i> 25 #73 <b>Teacher Edition:</b> AE P16

STANDARDS	PAGE REFERENCES
<b>2. Objects in the plane and their parts, attributes, and measurements can be analyzed deductively</b>	
<p>a. Classify polygons according to their similarities and differences</p>	<p>This objective could be taught with the following examples.</p> <p><b>Student Edition:</b>  <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>Practice and Problem Solving</i> 23 #43  <i>Spiral Review</i> 870 #78, 903 #68  <i>Spreadsheet Lab</i> 807</p> <p><b>Teacher Edition:</b>            AE P17, P18; EC 807; T 834; TT P18, 809, 834;            WO P18</p>
<p>b. Solve for unknown attributes of geometric shapes based on their congruence, similarity, or symmetry</p>	<p><b>Student Edition:</b>  <i>Exercises</i> P16 #10, P18 #16  <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</p> <p><b>Teacher Edition:</b>            AE P15, P16; TT P16; EC 807; WO P16</p>
<p>c. Know and apply properties of angles including corresponding, exterior, interior, vertical, complementary, and supplementary angles to solve problems. Justify the results using two-column proofs, paragraph proofs, flow charts, or illustrations</p>	<p><b>Student Edition:</b>  <i>Check Your Understanding</i> 906  <i>Example</i> 904-906  <i>H.O.T. Problems</i> 908  <i>Practice and Problem Solving</i> 46 #32, 907-908  <i>Standardized Test Practice</i> 10 #52  <i>Why?</i> 904</p> <p><b>Teacher Edition:</b>            AE 905, 906</p>
<p>d. Develop conjectures and solve problems about geometric figures including definitions and properties (congruence, similarity, and symmetry). Justify these conjectures using two-column proofs, paragraph proofs, flow charts, or illustrations</p>	<p><b>Student Edition:</b>  <i>Geometry Lab</i> 824  <i>H.O.T. Problems</i> 88 #38, 701 #70  <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</p> <p><b>Teacher Edition:</b>            AE P15, P16; TT P16; EC 807; WO P16</p>

STANDARDS	PAGE REFERENCES
<p><b>3. Objects in the plane can be transformed, and those transformations can be described and analyzed mathematically</b></p>	
<p>a. Make conjectures involving two-dimensional objects represented with Cartesian coordinates. Justify these conjectures using two column proofs, paragraph proofs, flow charts, and/or illustrations</p>	<p><b>Student Edition:</b>  <i>Check Your Understanding</i> 634  <i>Examples</i> 631-633  <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><b>Teacher Edition:</b>  A 635; AE 632, 633; DI 637; T 631; TT 633</p>
<p>b. Represent transformations (reflection, translation, rotation, and dilation) using Cartesian coordinates</p>	<p><b>Student Edition:</b>  209  <i>Algebra Lab</i> 218-219  <i>Check Your Understanding</i> 213-214  <i>Example</i> 210-211, 213, 417-419  <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><b>Teacher Edition:</b>  AE 210, 211, 212, 213, 418; DI 216, 217; FM 212; T 209; TT 210; WO 212</p>

STANDARDS	PAGE REFERENCES
<p>c. Develop arguments to establish what remains invariant and what changes after a transformation (reflection, translation, rotation, and dilations). Justify these conjectures using two-column proofs, paragraph proofs, flow charts, and/or illustrations</p>	<p>This objective should be taught along with the following examples.</p> <p><b>Student Edition:</b>  <i>Algebra Lab</i> 218-219  <i>Check Your Understanding</i> 213-214  <i>Example</i> 210-211, 213, 417-419  <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><b>Teacher Edition:</b>            AE 210, 211, 212, 213, 418; DI 216, 217; FM 212; T 209; TT 210; WO 212</p>
<p>d. Using construction tools, including technology, make conjectures about relationships among properties of shapes in the plane including those formed through transformation. Justify these conjectures using two-column proofs, paragraph proofs, flow charts, and/or illustrations</p>	<p><b>Student Edition:</b>  <i>Graphing Technology Lab</i> 108  <i>H.O.T. Problems</i> 338 #65  <i>Preparing for Standardized Tests</i> 402-403  <i>Practice and Problem Solving</i> 9 #42</p> <p><b>Teacher Edition:</b>            T 402</p>
<p><b>4. Right triangles are central to geometry and its applications</b></p>	
<p>a. Apply right triangle trigonometry (sine, cosine, and tangent) to find indirect measures of lengths and angles</p>	<p><b>Student Edition:</b>  <i>Check Your Understanding</i> 813, 836, 843  <i>Examples</i> 808-809, 832-836, 841-843  <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><b>Teacher Edition:</b>            AE 810, 811, 812, 833, 834</p>

STANDARDS	PAGE REFERENCES
<p>b. Apply the Pythagorean theorem and its converse to solve real-world problems</p>	<p><b>Student Edition:</b>  <i>Exercises</i> P18  <i>Example</i> P17-P18  <i>Skills Review</i> 763 #36-#41  <i>Spiral Review</i> 459 #83  <b>Teacher’s Edition:</b>            AE P17, P18; TT P18; WO P18</p>
<p>c. Determine the midpoint of a line segment and the distance between two points in the Cartesian coordinate plane</p>	<p><b>Student Edition:</b>  <i>Chapter Summary</i> 668  <i>Check Your Understanding</i> 619 #1-#4  <i>Example</i> 617, 619, 632  <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>Spiral Review</i> 870 #78  <i>Study Guide and Review</i> 669 10-1  <i>Study Tip</i> 619  <i>Test-Taking Tip</i> 619  <b>Teacher Edition:</b>            AE 618; DI 618; TT 619</p>