

**Glencoe**  
**Algebra 1: Integration, Applications, Connections**  
**Volume Two ©2001**

*correlated to*

**SOUTH CAROLINA**  
**MATH CURRICULUM STANDARDS**  
**Mathematics for the Technologies 2**

OBJECTIVES	LESSON REFERENCES
<p><b>I. Generalizations, algebraic symbols, and matrices.</b></p> <p><b>A.</b> Represent very large and very small numbers in exponential form and scientific form (interpreting calculator display).</p> <p><b>B.</b> Identify and use properties related to operations with matrices (addition, subtraction, scalar multiplication).</p> <p><b>C.</b> Solve applied problems using matrices.</p> <p><b>II. Algebraic expressions in problem-solving situations.</b></p> <p><b>A.</b> Find specific function values, and evaluate expressions.</p> <p><b>B.</b> Use patterns to generate the laws of exponents (multiplication, division, power raised to a power).</p>	<p>9-3, CT-9</p> <p>REV2-2, REV5-7, REV6-3, CT-6, 7-7, 7-7B, 7-8, 7-SGA, 9-SGA</p> <p>REV2-2, CT-2, REV5-7, REV6-3, CT-6, 7-7, 7-7B, 7-8, 7-SGA, 9-SGA</p> <p>REV1-3, REV2-3, REV2-5, REV2-8, CT-2, REV5-5, CT-5</p> <p>9-1, 9-2</p>

<p><b>KEY</b> CR = Cumulative Review  CT = Chapter Test  PC = Prerequisite Concept</p>	<p>REV = Review  SGA = Study Guide and Assessment  ST = Self Test</p>
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<p><b>C.</b> Apply the laws of exponents in problem situations.</p> <p><b>D.</b> Simplify polynomial expressions using multiplication and division by monomial.</p> <p><b>E.</b> Investigate factoring techniques using greatest common factor, difference between squares, quadratic trinomial, and grouping.</p> <p><b>III. Interpretations.</b></p> <p><b>A.</b> Relate direct variation to linear functions.</p> <p><b>B.</b> Solve problems involving proportional change.</p> <p><b>IV. Linear functions and data representations.</b></p> <p><b>A.</b> Extend the study of linear functions (domain, range, and graph interpretations).</p> <p><b>B.</b> Represent, display, and interpret data, including representations on graphing calculators and computers (scatter plots, stem and leaf plots, and box-and-whiskers diagrams).</p> <p><b>C.</b> Write a linear equation that fits a data set, check the model for “goodness-of-fit,” and make predictions using the model.</p>	<p>9-1, 9-2, 9-3, 9-ST, 9-SGA, CT-9</p> <p>9-6A, 9-6, 9-SGA, 12-4, 12-SGA, CT-9, CT-12</p> <p>10-1, 10-2A, 10-2, 10-3A, 10-3, 10-ST, 10-4, 10-5, 10-6, 10-SGA, CT-10</p> <p>REV3-6, REV3-7</p> <p>REV3-6, REV3-7</p> <p>REV5-4, REV5-5, REV5-6, CT-5, REV6-5</p> <p>REV1-4, CT-1, REV3-7, REV5-7, REV6-3, CT-6, 7-7, 7-8, 8-4, 9-4, 9-8, 10-2, 10-5, 11-4</p> <p>REV6-3, 9-4, 10-5, 11-4</p>

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<p><b>V. Systems of linear equations.</b></p> <p><b>A.</b> Analyze situations and formulate systems of linear equations to solve problems.</p> <p><b>B.</b> Solve systems of linear equations using concrete models, graphs, tables, and algebraic methods (e.g., elimination, substitution) including Computer Algebra Systems (CAS), spreadsheets, and graphing calculators.</p> <p><b>C.</b> For given contexts, interpret and determine the reasonableness of solutions to systems of linear equations.</p> <p><b>VI. Linear and quadratic functions and data representations.</b></p> <p><b>A.</b> Identify the parent functions (linear (<math>y = x</math>) and quadratic (<math>y = x^2</math>)).</p> <p><b>B.</b> Sketch the parent functions (linear (<math>y = x</math>) and quadratic (<math>y = x^2</math>)).</p> <p><b>VII. Quadratic functions.</b></p> <p><b>A.</b> Determine the domain and range values for quadratic functions given the constraints of the problem.</p> <p><b>B.</b> With and without using a graphing calculator, investigate, describe, and predict the effects of changing the</p>	<p>8-1, 8-2, 8-3, 8-ST, 8-4, 8-SGA, CT-8</p> <p>8-1A, 8-1, 8-2, 8-3, 8-ST, 8-4, 8-5, 8-SGA, CT-8</p> <p>8-1, 8-2, 8-3, 8-4, CT-8</p> <p>REV5-4, CT-5, 8-1A, 11-1B</p> <p>REV5-4, CT-5, 8-1A, 11-1B</p> <p>11-1, 11-2</p> <p>11-1B</p>

OBJECTIVES	LESSON REFERENCES
<p>constant <math>a</math> on the graph of <math>y = ax^2</math> and the constant <math>c</math> on the graph of <math>y = x^2 + c</math>.</p> <p><b>C.</b> For problem situations, analyze graphs of quadratic functions, and draw conclusions.</p> <p><b>D.</b> Solve quadratic equations using concrete models, tables, graphs, and algebraic methods that include factoring and using the quadratic formula, as well as CAS, spreadsheets, and graphing calculators.</p> <p><b>E.</b> Relate the solutions of quadratic equations to the roots of the function.</p> <p><b>VIII. Other functions.</b></p> <p><b>A.</b> Data as functions (inverse variation and exponential growth and decay).</p> <p><b>B.</b> Data as representation (concrete models, tables, graphs, and algebraic methods as well as CAS, spreadsheets, and graphing calculators).</p>	<p>11-1, 11-2, 11-SGA</p> <p>11-2, 11-3, 11-ST, 11-SGA, CT-10</p> <p>10-6, 13-1, CT-10</p> <p>REV4-8, CT-4, 11-4A, 11-4, 11-5, 11-SGA, CT-11</p> <p>REV4-8, CT-4, 11-4A, 11-4, 11-5, 11-SGA, 12-1B, 12-4, CT-11</p>