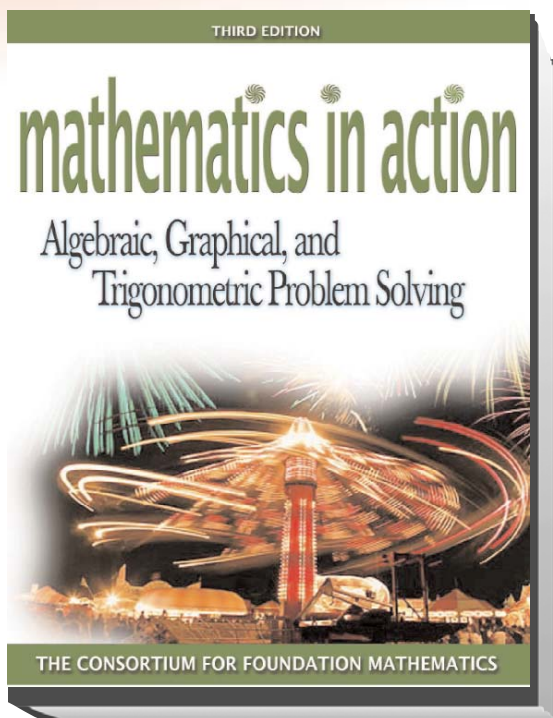


Prentice Hall
Mathematics in Action:
Algebraic, Graphical & Trigonometric
Problem Solving © 2010



C O R R E L A T E D T O

South Carolina Academic Standards for Math Technologies 1

PEARSON

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Course Outline	
All of the following items are identified as eligible for end-of-course testing and are essential for success in subsequent math courses.	
I. Generalizations and algebraic symbols.	
A. Use unit analysis to check measurement computations of English and metric units (e.g., 5 miles per hour = x feet per second). Algebra 1: I.C.2.	
B. Make judgments about the appropriateness of units of measure within a system and between systems. Algebra 1: I.A.5.	
C. Determine patterns. Algebra 1: I.C.3.	SE/TE: 56–58, 60, 292, 295, 304, 307, 332, 439–440, 475–476, 515–516
D. Recognize and justify the effects of such operations as multiplication, division, and computing powers and roots on the magnitudes of quantities. Algebra 1: I.C.5.	
I. Algebraic expressions in problem-solving situations.	
A. Find specific function values and evaluate expressions. Algebra 1: I.D.1.	SE/TE: 14, 19, 29–31, 37, 39, 41, 235
B. Simplify polynomial expressions using Algebra 1: I.D.2. 1. Addition. 2. Subtraction.	SE/TE: 189, 193–194, 221–222
C. Identify the steps to simplify algebraic expressions. Algebra 1: I.D.6. 1. Commutative. 2. Associative. 3. Distributive.	SE/TE: 189 (Ex 5)
D. Use symbolic representation and reasoning to verify statements about numbers. Algebra 1: I.C.4.	SE/TE: 119 (step 5), 120–122, 253 (#5i), 312 (#10), 388 (#4)
E. Given a problem situation, determine the type of solution required and an appropriate technique. Algebra 1: I.D.4. 1. A rough estimate. 2. An approximation. 3. An exact answer.	

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<p>F. Select a suitable method of computing. Algebra 1: I.D.4.</p> <ol style="list-style-type: none"> 1. Mental mathematics. 2. Paper-and-pencil combinations. 3. Calculators. 4. Computers. 	
<p>III. Equations and inequalities.</p>	
<p>A. Transform and solve linear equations and inequalities using Algebra 1: II.C.2.,3.</p> <ol style="list-style-type: none"> 1. Forms. <ol style="list-style-type: none"> a. One-step. b. Multi-step. 2. Properties. <ol style="list-style-type: none"> a. Commutative. b. Associative. c. Distributive. d. Equality. 3. Models, including graphs. 	<p>SE/TE: 99–100, 109–116, 126–127, 129, 135, 151, 156–157, 162</p>
<p>B. Represent relationships among quantities. Algebra 1: I.A.2.,4.; II.A.1.,3.</p> <ol style="list-style-type: none"> 1. Representations. <ol style="list-style-type: none"> a. Concrete models. b. Tables. c. Graphs. d. Diagrams. e. Verbal descriptions. f. Equations. g. Inequalities. h. Determine if the situation can be represented by a linear function. 2. Tools. <ol style="list-style-type: none"> a. Computer Algebra Systems (CAS). b. Spreadsheets. c. Graphing calculators. 	<p>SE/TE: 149, 152–157, 164</p>

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<p>C. Analyze problem situations. Algebra 1: I.A.3.; II.C.1.</p> <ol style="list-style-type: none"> 1. Describe functional and recursive relations. 2. Write equations. 3. Write inequalities. 	SE/TE: 64–73, 93–94
<p>D. For given contexts, use concrete models to interpret and determine the reasonableness of solutions to linear equations and inequalities. Algebra 1: II.C.4.</p>	
<p>E. Use supporting data to explain why a solution is mathematically reasonable. Algebra 1: I.D.5.</p>	SE/TE: 124–125, 129, 149–151, 451, 454, 459–460
IV. Slopes of lines.	
<p>A. Develop the concept of slope as a rate of change, and determine slope. Algebra 1: II.B.1.</p> <ol style="list-style-type: none"> 1. Graphs. 2. Tables. 3. Algebraic representations. 	SE/TE: 45–52, 55–56, 58–59, 62–63, 79, 81
<p>B. Interpret the meaning of slope and intercepts in situations involving Algebra 1: II.B.2.</p> <ol style="list-style-type: none"> 1. Data. 2. Symbolic representations. 3. Graphs. 	SE/TE: 52–54, 56, 58–60, 69–71, 73
<p>C. With and without a graphing calculator, investigate, describe, and predict the effects of changes in m and b on the graph of $y = mx + b$ and the results of these changes in applied situations. Algebra 1: II.B.3.,6.</p>	SE/TE: 61
<p>D. Graph and write equations of lines with given characteristics. Algebra 1: II.B.4.</p> <ol style="list-style-type: none"> 1. Two points. 2. One point and a slope. 3. A slope and y-intercept. 	SE/TE: 64–66, 68–70, 93–94

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E. Determine the intercepts of linear functions using Algebra 1: II.B.5. 1. Graphs. 2. Tables.	SE/TE: 52, 55, 58, 60, 63, 69–71, 81
V. Linear functions and data representations.	
A. For a variety of situations, identify and determine reasonable domain and range values. Algebra 1: I.B.2.; II.A.2.	SE/TE: 18, 21, 31, 59, 75 (#2d), 422, 569 (#10)
B. Match situations to given graphs, and justify or interpret the match. Algebra 1: I.B.3.	SE/TE: 91–92, 304, 427, 558, 567
C. Create situations that fit given graphs. Algebra 1: I.B.3.	SE/TE: 42
D. Represent, display, and interpret data, including representations on graphing calculators and computers. Algebra 1: I.B.4. 1. Scatter plots. 2. Bar graphs.	SE/TE: 43, 83, 340–341, 396, 467