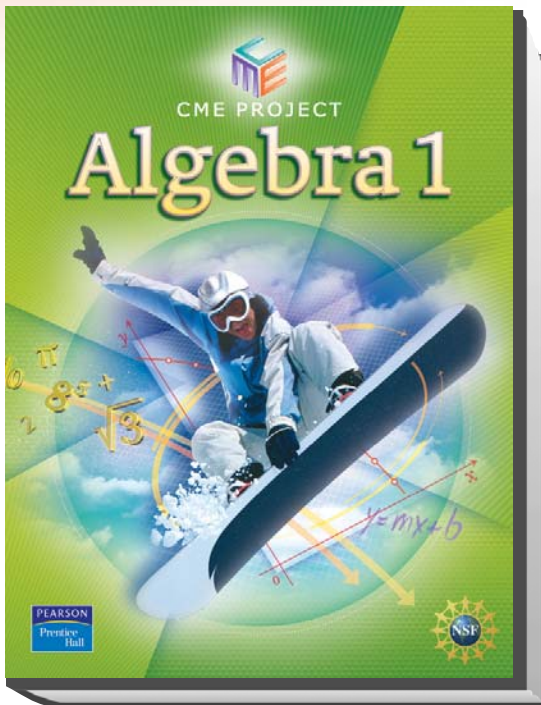


Prentice Hall

CME Project Algebra 1 © 2009



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

Indiana Math Standards Final Draft from March 2009

Algebra 1

PEARSON

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A1.1 Relations and Functions	
A1.1.1 Determine whether a relation represented by a table, graph, words or equation is a function or not a function and translate among tables, graphs, words and equations.	SE/TE: 411-412, 414-416, 420-422, 426-427, 435-438, 447-448, 451-454, 460-462, 469-470, 473-478, 482-488, 496-497, 559, 596-598, 731, 747-751
A1.1.2 Identify the domain and range of relations represented by tables, graphs, words, and equations.	SE/TE: 431-432, 496 This topic is addressed further in CME Algebra 2.
A1.2 Linear Functions, Equations and Inequalities	
A1.2.1 Translate among various representations of linear functions including tables, graphs, words and equations.	SE/TE: 251, 253-255, 262, 275-277, 301, 344-345, 349-351, 402, 447-448, 451-454, 460-462, 473-478, 496-497
A1.2.2 Graph linear equations and show that they have constant rates of change.	SE/TE: 251, 253-254, 275-277, 301, 335, 344-345, 350, 402, 447, 451-454, 496
A1.2.3 Determine the slope, x -intercept, and y -intercept of a line given its graph, its equation, or two points on the line and determine the equation of a line given sufficient information.	SE/TE: 313-315, 339-341, 344-345, 402-403, 451-454
A1.2.4 Write, interpret, and translate among equivalent forms of equations for linear functions (slope-intercept, point-slope, and standard), recognizing that equivalent forms reveal more or less information about a given situation.	SE/TE: 344-345, 497
A1.2.5 Solve problems that can be modeled using linear equations and inequalities, interpret the solutions, and determine whether the solutions are reasonable.	SE/TE: 159, 162-163, 167-168, 273, 275-277, 381, 384-385, 401, 402, 457, 462, 464-466, 473-476, 497
A1.2.6 Graph a linear inequality in two variables.	SE/TE: 739-744, 759
A1.3 Pairs of Linear Equations and Inequalities	
A1.3.1 Understand the relationship between a solution of a pair of linear equations in two variables and the graphs of the corresponding lines and solve pairs of linear equations in two variables by graphing, substitution or elimination.	SE/TE: 266, 310, 349-351, 357-358, 360-364, 368-370, 373-375, 402
A1.3.2 Graph the solution set for a pair of linear inequalities in two variables with and without technology and use the graph to find the solution set.	SE/TE: 740-744, 759
A1.3.3 Solve problems that can be modeled using pairs of linear equations in two variables, interpret the solutions, and determine whether the solutions are reasonable.	SE/TE: 310, 349-351, 357-358, 364-366, 370-371, 376-377, 401, 403
A1.4 Polynomials	
A1.4.1 Use the laws of exponents for variables with exponents and multiply, divide, and find powers of variables with exponents.	SE/TE: 503-504, 506-507, 512-514, 517-519, 596-599, 617

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Indiana Math Standards Final Draft from March 2009, to Algebra I

Indiana Math Standards Final Draft from March 2009, to Algebra I	CME Project, Algebra 1 © 2009
A1.4.2 Add, subtract and multiply polynomials and divide polynomials by monomials.	SE/TE: 593-594, 622-624, 627-629, 633-634, 674-675, 690
A1.4.3 Factor common terms from polynomials and factor quadratic expressions.	SE/TE: 604-606, 609-610, 645-647, 653-657, 661-663, 675, 691-692, 695-697
A1.5 Quadratic Equations and Functions	
A1.5.1 Graph quadratic functions.	SE/TE: 251, 258-260, 271, 284-286, 291-294, 706-708, 711-716, 720-725, 734-736, 743-744
A1.5.2 Solve quadratic equations in the real number system with real number solutions by factoring, by completing the square, and by using the quadratic formula.	SE/TE: 604, 654-655, 661-666, 675, 681, 683-687, 691-693, 695-697, 731
A1.5.3 Solve problems that can be modeled using quadratic equations, interpret the solutions, and determine whether the solutions are reasonable.	SE/TE: 262-263, 271, 703-704, 708-709
A1.5.4 Analyze and describe the relationships among the solutions of a quadratic equation, the zeros of a quadratic function, the x-intercepts of the graph of a quadratic function, and the factors of a quadratic expression.	SE/TE: 690-693, 720-723
A1.5.5 Sketch and interpret linear and non-linear graphs representing given situations and identify independent and dependent variables.	SE/TE: 262, 271, 275-279, 285, 290, 310, 312, 319-323, 349-351, 357, 392-395, 401, 565, 568-570, 708, 720-724
A1.6 Rational and Radical Expressions and Equations	
A1.6.1 Add, subtract, multiply, divide, reduce, and evaluate rational expressions with polynomial denominators. Simplify rational expressions with linear and quadratic denominators, including denominators with negative exponents.	SE/TE: 512-514, 517-519 This topic is addressed further in CME Algebra 2 and CME Precalculus.
A1.6.2 Solve equations involving rational and common irrational expressions.	SE/TE: 531 This topic is addressed further in CME Algebra 2 and CME Precalculus.
A1.6.3 Simplify radical expressions involving square roots.	SE/TE: 534-535, 538-540, 542-543, 554 This topic is addressed further in CME Algebra 2 and CME Precalculus.
A1.6.4 Solve equations that contain radical expressions on only one side of the equation and identify extraneous roots when they occur.	Related material: SE/TE: 535, 542-543 This topic is addressed further in CME Algebra 2 and CME Precalculus.
A1.7 Data Analysis	
A1.7.1 Organize and display data using appropriate methods to detect patterns and departures from patterns. Summarize the data using measures of center (mean, median) and spread (range, percentiles, variance, standard deviation). Compare data sets using graphs and summary statistics.	SE/TE: 219-220, 223-226, 230-231, 235-239, 302, 392-395, 403

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A1.7.2 Distinguish between random and non-random sampling methods, identify possible sources of bias in sampling, describe how such bias can be controlled and reduced, evaluate the characteristics of a good survey and well-designed experiment, design simple experiments or investigations to collect data to answer questions of interest, and make inferences from sample results.	SE/TE: 219, 243-245
A1.7.3 Evaluate reports based on data published in the media by considering the source of the data, the design of the study, the way the data are analyzed and displayed and whether the report confuses correlation with causation.	Related material: SE/TE: 243-245, 392-395, 403
Process Standards	
Problem Solving	
<ul style="list-style-type: none"> • Build new mathematical knowledge through problem solving. 	<p>This standard is addressed throughout the text. Sample citations follow: SE/TE: 28-30, 98-102, 167-171, 210-216, 275-283, 349-353, 473-481, 523-527, 617, 705-710</p>
<ul style="list-style-type: none"> • Solve problems that arise in mathematics and in other contexts. 	<p>This standard is addressed throughout the text. Sample citations follow: SE/TE: 14, 162-165, 251, 369-370, 422, 451-457, 562-566, 596-601, 706-709</p>
<ul style="list-style-type: none"> • Apply and adapt a variety of appropriate strategies to solve problems. 	<p>This standard is addressed throughout the text. Sample citations follow: SE/TE: 9-10, 59, 91, 251, 381-382, 447-448, 504, 531, 593-594, 681</p>
<ul style="list-style-type: none"> • Monitor and reflect on the process of mathematical problem solving. 	<p>This standard is addressed throughout the text. Sample citations follow: SE/TE: 4-7, 72, 105, 120, 203-204, 260, 314, 427, 475, 707</p>
Reasoning and Proof	
<ul style="list-style-type: none"> • Recognize reasoning and proof as fundamental aspects of mathematics. 	<p>This standard is addressed throughout the text. Sample citations follow: SE/TE: 25, 43, 206, 369-370, 422, 451-457, 533-535, 596-597, 645-646, 706-708</p>
<ul style="list-style-type: none"> • Make and investigate mathematical conjectures. 	<p>This standard is addressed throughout the text. Sample citations follow: SE/TE: 17-20, 29-31, 137, 225-229, 345-346, 357-358, 411-413, 507-508, 531, 641</p>
<ul style="list-style-type: none"> • Develop and evaluate mathematical arguments and proofs. 	<p>This standard is addressed throughout the text. Sample citations follow: SE/TE: 82-83, 179, 243, 369-370, 494-495, 533-535, 645-646, 706-708, 756-757</p>

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<ul style="list-style-type: none"> • Select and use various types of reasoning and methods of proof. 	<p>This standard is addressed throughout the text. Sample citations follow: SE/TE: 4-7, 25, 105, 206, 314, 422, 451-457, 596-597, 645-646, 707</p>
Communication	
<ul style="list-style-type: none"> • Organize and consolidate their mathematical thinking through communication. 	<p>This standard is addressed throughout the text. Sample citations follow: SE/TE: 17-20, 29-31, 137, 225-229, 345-346, 357-358, 411-413, 507-508, 531, 641</p>
<ul style="list-style-type: none"> • Communicate their mathematical thinking coherently and clearly to peers, teachers, and others. 	<p>This standard is addressed throughout the text. Sample citations follow: SE/TE: 82-83, 179, 301, 401, 494-495, 582-583, 672-673, 756-757</p>
<ul style="list-style-type: none"> • Analyze and evaluate the mathematical thinking and strategies of others. 	<p>This standard is addressed throughout the text. Sample citations follow: SE/TE: 67, 143-144, 206, 291-292, 349-351, 437-438, 518-519, 627-628, 690-691, 722-723</p>
<ul style="list-style-type: none"> • Use the language of mathematics to express mathematical ideas precisely. 	<p>This standard is addressed throughout the text. Sample citations follow: SE/TE: 17-20, 29-31, 137, 225-229, 345-346, 357-358, 411-413, 507-508, 531, 641</p>
Connections	
<ul style="list-style-type: none"> • Recognize and use connections among mathematical ideas. 	<p>This standard is addressed throughout the text. Sample citations follow: SE/TE: 25, 43, 206, 369-370, 422, 451-457, 533-535, 596-597, 645-646, 706-708</p>
<ul style="list-style-type: none"> • Understand how mathematical ideas interconnect and build on one another to produce a coherent whole. 	<p>This standard is addressed throughout the text. Sample citations follow: SE/TE: 82-83, 179, 301, 401, 494-495, 582-583, 672-673, 756-757</p>
<ul style="list-style-type: none"> • Recognize and apply mathematics in contexts outside of mathematics. 	<p>This standard is addressed throughout the text. Sample citations follow: SE/TE: 162-166, 167-171, 219-222, 243-247, 349-353, 357-359, 414-419, 475-481, 482-491</p>
Representation	
<ul style="list-style-type: none"> • Create and use representations to organize, record, and communicate mathematical ideas. 	<p>This standard is addressed throughout the text. Sample citations follow: SE/TE: 28-30, 98-102, 167-171, 210-216, 275-283, 349-353, 473-481, 523-527, 617, 705-710</p>
<ul style="list-style-type: none"> • Select, apply, and translate among mathematical representations to solve problems. 	<p>This standard is addressed throughout the text. Sample citations follow: SE/TE: 14-16, 51-54, 189-195, 275-283, 345-346, 547-548, 596-602, 641-643, 650-651, 706-710</p>

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Indiana Math Standards Final Draft from March 2009, to Algebra I

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<ul style="list-style-type: none"> • Use representations to model and interpret physical, social, and mathematical phenomena. 	<p>This standard is addressed throughout the text. Sample citations follow: SE/TE: 93-97, 103-108, 196-201, 253-257, 258-263, 275-283, 344-348, 562-566, 596-601, 706-709</p>
Estimation and Mental Computation	
<ul style="list-style-type: none"> • Know and apply appropriate methods for estimating the results of computations. 	<p>This standard is addressed throughout the text. Sample citations follow: SE/TE: 360, 388, 470, 526, 534, 555, 559, 567, 734-736</p>
<ul style="list-style-type: none"> • Use estimation to decide whether answers are reasonable. 	<p>This standard is addressed throughout the text. Sample citations follow: SE/TE: 352, 360-361, 388, 402, 470, 526, 559, 567, 734-736</p>
<ul style="list-style-type: none"> • Decide when estimation is an appropriate strategy for solving a problem. 	<p>This standard is addressed throughout the text. Sample citations follow: SE/TE: 324-325, 352, 360, 388, 402, 559, 567, 734-736</p>
<ul style="list-style-type: none"> • Determine appropriate accuracy and precision of measurement in problem situations. 	<p>This standard is addressed throughout the text. Sample citations follow: SE/TE: 43-45, 393-395, 403, 526, 534</p>
<ul style="list-style-type: none"> • Use properties of numbers and operations to perform mental computation. 	<p>This standard is addressed throughout the text. Sample citations follow: SE/TE: 13, 27, 59, 63, 73, 153-154, 470, 507, 512-513, 647-648</p>
<ul style="list-style-type: none"> • Recognize when the numbers involved in a computation allow for a mental computation strategy. 	<p>This standard is addressed throughout the text. Sample citations follow: SE/TE: 11, 22, 27, 59, 63, 153-154, 470, 647-648</p>
Technology	
<ul style="list-style-type: none"> • Technology should be used as a tool in mathematics education to support and extend the mathematics curriculum. 	<p>This standard is addressed throughout the text. Sample citations follow: SE/TE: 384-385, 396-399, 401, 414-419, 461-466, 482-492, 494-495, 533-534, 568-572, 706-708</p>
<ul style="list-style-type: none"> • Technology can contribute to concept development, simulation, representation, communication, and problem solving. 	<p>This standard is addressed throughout the text. Sample citations follow: SE/TE: 384-385, 396-399, 401, 414-419, 461-466, 482-492, 494-495, 533-534, 568-572, 706-708</p>
<ul style="list-style-type: none"> • The challenge is to ensure that technology supports-but is not a substitute for- the development of skills with basic operations, quantitative reasoning, and problem solving skills. 	<p>This standard is addressed throughout the text. Sample citations follow: SE/TE: 59, 63-65, 69, 296, 384-385, 395, 414-415, 533-534, 559, 734-735</p>

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Indiana Math Standards Final Draft from March 2009, to Algebra I

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o Graphing calculators should be used to enhance middle school and high school students' understanding and skills.	This standard is addressed throughout the text. Sample citations follow: SE/TE: 165, 384-385, 396-399, 461-462, 485-487, 533-534, 568, 734-735
o The focus must be on learning mathematics, using technology as a tool rather than as an end in itself.	This standard is addressed throughout the text. Sample citations follow: SE/TE: 59, 63-65, 69, 296, 384-385, 395, 414-415, 533-534, 559, 734-735