

## Algebra I – Indiana State Standards

<b>Standard</b>	<b>Description – Operations With Real Numbers</b>	<b>Lesson Title</b>	<b>Lesson #</b>
A1.1.2	Simplify square roots using factors.	Simplifying Radicals	29
A1.1.3.1	Simplify Algebraic Expressions	Simplifying Expressions	1
A1.1.3.2	Understand and use the distributive, associative, and commutative properties.	Solving Linear Equations	2

<b>Standard</b>	<b>Description – Linear Equations and Inequalities</b>	<b>Lesson Title</b>	<b>Lesson #</b>
A1.2.1	Solve linear equations.	Solving Linear Equations	2
A1.2.2	Solve equations and formulas for a specified variable.	Solving Complex Linear Equations	3
A1.2.4	Solve linear inequalities using properties of order.	Solving Linear Inequalities	4
A1.2.5	Solve combined linear inequalities.	Solving Linear Inequalities	4
A1.2.6.1	Solve word problems that involve linear equations.	Solving Word Problems Involving Linear Equations	14
A1.2.6.2	Solve word problems that involve linear inequalities.	Solving Word Problems Involving Linear Inequalities	5

<b>Standard</b>	<b>Description – Relations and Functions</b>	<b>Lesson Title</b>	<b>Lesson #</b>
A1.3.1	Sketch a reasonable graph for a given relationship.	Constant Rates of Change	8
A1.3.2	Interpret a graph representing a given situation.	Functions, and Interpreting Graphs	7
A1.3.3	Understand the concept of a function, decide if a given relation is a function, and link equations to functions.	Functions, and Interpreting Graphs	7
A1.3.4	Find the domain and range of a relation.	Functions, and Interpreting Graphs	7

<b>Standard</b>	<b>Description – Graphing Linear Equations and Inequalities</b>	<b>Lesson Title</b>	<b>Lesson #</b>
A1.4.1	Graph a linear equation.	Graphing Linear Equations	9
A1.4.2	Find the slope, x-intercept, and y-intercept of a line given its graph, its equation, or two points on the line.	Slope, x – intercepts, y - intercepts	10
A1.4.3	Write the equation of a line in slope-intercept form. Understand how the slope and y-intercept of the graph are related to the equation.	Slope, x – intercepts, y - intercepts	10
A1.4.4	Write the equation of a line given appropriate information.	Writing the Equation of a Linear Equation	11
A1.4.5.1	Describe the slope of the line in terms of the data, recognizing that the slope is the rate of change.	Constant Rates of Change	8
A1.4.5.2	Write the equation of a line that models a data set and use the equation (or the graph of the equation) to make predictions.	Constant Rates of Change	8
A1.4.6	Graph a linear inequality in two variables.	Graphing Linear Inequalities	13

<b>Standard</b>	<b>Description – Pairs of Linear Equations and Inequalities</b>	<b>Lesson Title</b>	<b>Lesson #</b>
A1.5.1	Use a graph to estimate the solution of a pair of linear equations in two variables.	Solving Systems of Equations by Graphing	15
A1.5.2	Use a graph to find the solution set of a pair of linear inequalities in two variables.	Graphing a System of Linear Inequalities	21
A1.5.3	Understand and use the substitution method to solve a pair of linear equations in two variables.	Solving Systems of Equations by Substitution	17
A1.5.4	Understand and use the addition or subtraction method to solve a pair of linear equations in two variables.	Solving Systems of Equations by Elimination	16
A1.5.5	Understand and use multiplication with the addition or subtraction method to solve a pair of linear equations in two variables.	Solving Systems of Equations by Elimination	16
A1.5.6	Use pairs of linear equations to solve word problems.	Solving Word Problems Involving a System of Linear Equations	19, 20

<b>Standard</b>	<b>Description – Polynomials</b>	<b>Lesson Title</b>	<b>Lesson #</b>
A1.6.1	Add and subtract polynomials.	Adding and Subtracting Polynomials	22
A1.6.2.1	Multiplying Monomials	Laws of Exponents	25
A1.6.2.2	Dividing Monomials	Laws of Exponents	25
A1.6.3.1	Find powers of monomials	Laws of Exponents	25
A1.6.3.2	Find roots of monomials	Simplifying Radicals	29
A1.6.4	Multiply polynomials.	Multiplying Binomials	23
A1.6.5	Divide polynomials by monomials.	Dividing Polynomials by Monomials	26
A1.6.6	Find a common monomial factor in a polynomial.	Dividing Polynomials by Monomials	26
A1.6.7	Factor the difference of two squares and other quadratics.	Factoring Trinomials of the form, $x^2 - C = 0$ , $x^2 + Bx + C = 0$ , and $Ax^2 + Bx + C = 0$	27, 28
A1.6.8	Understand and describe the relationships among the solutions of an equation, the zeros of a function, the x-intercepts of a graph, and the factors of a polynomial expression.	Roots, Zeros, and x – intercepts of a Quadratic Equation	35

<b>Standard</b>	<b>Description – Algebraic Fractions</b>	<b>Lesson Title</b>	<b>Lesson #</b>
A1.7.2	Solve algebraic proportions.	Solving Complex Linear Equations	3

<b>Standard</b>	<b>Description – Quadratic, Cubic, and Radical Equations</b>	<b>Lesson Title</b>	<b>Lesson #</b>
A1.8.1	Graph quadratic, cubic, and radical equations.	Graphing Quadratic Equations	37
A1.8.2	Solve quadratic equations by factoring.	Solving Quadratic Equations by Factoring	31
A1.8.3	Solve quadratic equations in which a perfect square equals a constant.	Solving Quadratic Equations by Completing the Square	32
A1.8.4	Complete the square to solve quadratic equations.	Solving Quadratic Equations by Completing the Square	32
A1.8.6	Solve quadratic equations using the quadratic formula.	Solving Quadratic Equations by the Quadratic Formula	33
A1.8.7.1	Use quadratic equations to solve word problems.	Geometric Applications of Quadratic Equations	34
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A1.8.8	Solve equations that contain radical expressions.	Solving Radical Equations	39