Intermediate Algebra Learning Targets - Tri A
2nd Edition 2014-15

Unit 1 – Linear Inequalities and Systems of Linear Inequalities	Benchmark
1.1 I can demonstrate understanding of how to represent a region on a graph with an inequality. *Prior Knowledge:* • *I can graph a linear function by generating a table of values, using the x and y-intercepts and using slope-intercept form.* • *I can identify how coefficient changes in the equation f(x) = mx + b affect the graphs of linear functions.* • *I can convert between slope-intercept, point-slope and standard forms of a linear equation.* • *I can solve linear inequalities and graph the solution on a number line.*	9.2.2.3 9.2.4.4
1.2 I can demonstrate understanding of real-world situations that can be modeled as linear equations or linear inequalities. *Prior Knowledge:* • *I can identify an independent and dependent variable and determine the relationship between the two.* • *I understand a linear function has a constant rate of change.* • *I can solve one-step linear equations, multistep linear equations and equations with variables on both sides.* • *I can write a linear equation in point-slope form, standard form and to represent a real world situation.* • *I can represent a real world situation with a system of linear equations.* • *I can write a linear inequality to represent a real world situation (1-variable)*	9.2.2.1
1.3 I can represent real-world situations as a linear programming problem and demonstrate an understanding of how to find reasonable solutions. Include: ✓ Solving systems of linear inequalities *Prior Knowledge:* • *I can find a solution to a system of linear equations graphically, using substitution, and using combinations/elimination.*	9.2.4.4 9.2.4.5
Extensions ➢ Write and solve a system of linear equations with 3 variables ➢ Use Matrices to solve systems: Cramer's Rule, Inverses of matrices	

Unit 2 – Functions	Benchmark
2.1 I can demonstrate understanding of the definition of a function and can determine when relations are functions given a graph, table or real-world situation *Prior Knowledge:* • *I can identify an independent and dependent variable and determine the relationship between the two.* • *I can determine whether a relation is a function based on its table or graph.* • *I can use function notation to represent relationships.*	9.2.1.1 9.2.1.2
2.2 I understand the meaning of function notation and can evaluate a function for a given input. Include: ✓ absolute value, radicals, polynomials and rational functions *Prior Knowledge:* • *I can evaluate expressions containing positive, negative and zero exponents.* • *I can evaluate and approximate square roots.* • *I can evaluate expressions containing absolute values.* • *I can use the order of operations to evaluate expressions.*	9.2.1.1
2.3 I can demonstrate understanding of the significant features of a function represented by a graph, a table, or an equation and the relationship these features have to real-world situations. Include: ✓ ideas connected to intercepts; intervals where the function is increasing, decreasing, positive or negative; relative ✓ maximums and minimums; symmetries; asymptotes; domain and average rate of change over an interval – for graphs of exponential, quadratics, polynomials, absolute and rational functions *Prior Knowledge:* • *I can identify the x- and y-intercepts of a line from a graph or an equation.*	9.2.1.3 9.2.1.4 9.2.1.5 9.2.1.6 9.2.1.7 9.2.1.8

Extensions ➢ Represent (equations with domains and graphs) and solve real-world situations using piecewise functions, including step functions.	

Unit 3 – Exponential Functions	Benchmark
3.1 I can demonstrate understanding about exponential functions and compare situations and equations for exponential functions to those for linear functions. *Prior Knowledge:* • *I can write equations and graph exponential growth and decay.*	9.2.2.2
3.2 I can use tables and graphs to solve exponential equations including real-world situations and translate between representations. Include: ✓ investment growth, depreciation and population growth	9.2.2.3 9.2.2.2 9.2.4.2
3.3 I can evaluate exponential functions in the form $y=ab^x$ and relate the meaning to the context of a real-world situation. Include: ✓ integer exponents only	9.2.2.2
3.4 I can demonstrate understanding of the significant features of a graph of an exponential function and their relationship to real-world situations. Include: ✓ asymptotes, domain and range, increasing/decreasing, intercepts	9.2.1.3 9.2.1.6 9.2.1.7

Unit 4 – Situations That Can Be Modeled with Quadratic Functions	Benchmark
4.1 I can graph quadratic functions and demonstrate understanding of significant features of different forms of quadratic equations and their real-world situations. Include: ✓ Standard form, vertex form, and factored/intercept forms ✓ vertex, line of symmetry, intercepts, domain and range ✓ With and without a graphing calculator	9.2.2.3 9.2.1.3 9.2.1.4 9.2.1.5
4.2 I can translate quadratic equations from factored and vertex forms into standard form. Include: ✓ Multiply binomials *Prior Knowledge:* • *I can simplify expressions by combining like terms and by using the distributive property.*	9.2.3.2 9.2.3.3
4.3 I can translate quadratic equations from standard form into factored and vertex forms. Include: ✓ Factor a quadratic expression ✓ Complete the square	9.2.3.2 9.2.3.3