Sec 1.3

Identify equivalent expressions. Solve equations using addition or multiplication principles. Combine like terms. Simplify and then solve. Solve equations and classify as conditional, identity, or contradiction.

Sec 2.1

Plot points on a coordinate plane. Name the quadrant in which a point is located.

Determine whether an ordered pair is a solution of a given equation. Graph equations.

Sec 2.2

Determine whether a correspondence is a function.

Find domain and range, and determine whether a correspondence is a function. Analyze function graphs.

Identify functions given a graph.

Evaluate functions.

Find domains of functions.

Solve applications using functions.

Sec 2.3

Graph linear functions. Determine the y-intercept of linear functions.

Find the slope given a pair of points. Given an equation, find slope and y-intercept.

Find an equation, given a slope and y-intercept.

Find the rate of change given a graph. Solve applications using linear functions.

Sec 2.4

Find slope, given an equation. Graph horizontal and vertical lines. Find intercepts and graph a linear equation.

Determine whether equations are linear.

Sec 2.5

Find an equation and graph, given point and slope.

Given a point-slope equation, state the slope and a point on the graph.

Write an equation in slope-intercept form and graph.

Find an equation given two points. Solve applications using linear equations. Write equations of parallel lines. Write equations of perpendicular lines.

Math 1010 Objectives

Section 3.2

Solve two variable systems of linear equations using substitution. Solve two variable systems of linear equations systems using elimination. Solve two variable systems of linear equations using an appropriate method.

Section 3.3

Solve applications using systems of two linear equations.

Section 3.4

Identify solutions to a system of three equations.

Solve a system of three linear equations. Identify when a system of three linear equations is inconsistent.

Solve dependent systems of three linear equations.

Section 4.1

Determine whether a given number is a solution of an inequality. Graph inequalities and write solutions in set- builder and interval notation. Solve and graph inequalities using the addition principle for inequalities. Solve and graph inequalities using the multiplication principle for inequalities. Solve and graph inequalities using addition and multiplication principles together.

Find the domain of a radical function. Solve applications problems using linear inequalities.

Section 4.2

Find the intersection or union of sets. Graph and write interval notation for compound inequalities. Solve and graph compound inequalities. Find the domain of a function using interval notation.

Section 4.3

Solve equations with absolute value. Solve equations with two absolute values. Solve inequalities with absolute value.

Section 4.4

Determine whether an ordered pair is a solution of an inequality. Graph linear inequalities. Graph systems of linear inequalities. **Section 5.3** Factor out a common factor. Factor out a common factor with a negative coefficient. Factor out a common binomial factor. Factor by grouping. Factor in problem solving.

Section 5.4

Factor trinomials of the type $x^2 + bx + c$ Factor trinomials of the type $ax^2 + bx + c$, a not 1.

Section 5.5

Factor perfect-square trinomials. Factor the difference of two squares. Factor by grouping.

Section 5.6

Factor the sum or difference of cubes.

Section 5.7

Factor mixed problems using a general strategy.

Section 5.8

Use the principle of zero products to solve equations. Find the domain of a function. Solve application problems involving factoring.

Section 6.1

Find function values for rational functions. Simplify rational expressions by removing a factor equal to 1. Simplify rational expressions and list all restrictions on the domain. Multiply and simplify rational expressions. Divide and simplify rational expressions. Multiply or divide rational expressions and list all restrictions on the domain.

Section 6.2

Add or subtract rational expressions with like denominators. Find the least common multiple of a pair of polynomials. Simplify a function involving rational expressions with like denominators. Add or subtract rational expressions with unlike denominators. Simplify a function involving rational

expressions with unlike denominators.

Section 6.3

Simplify complex rational expressions.

Section 6.4

Solve rational equations. Solve applications involving rational functions.

Section 6.5

Solve problems involving reciprocals. Solve problems involving work. Solve problems involving motion.

Section 6.6

Divide a polynomial by a monomial. Divide a polynomial by a polynomial. Divide using function notation.

Section 6.8

Solve a formula for a specified variable.

Section 1.6

Use the quotient rule for exponents. Simplify expressions using negative and zero exponents. Use the product and quotient rules with negative exponents. Raise a power to a power.

Raise a product or quotient to a power.

Section 7.1

Find square roots. Identify the radicand and the index of an expression. Find function values of square root functions. Simplify radical expressions. Find function values of nth root functions. Determine the domain of a radical function. **Section 7.2** Rewrite rational exponents using radical notation. Rewrite radical expressions using rational exponents. Rewrite expressions using positive

rational exponents. Use the laws of exponents to simplify.

Simplify radical expressions using rational exponents.

Section 7.3

Multiply radical expressions. Simplify radical expressions by factoring. Multiply and simplify radical expressions.

Section 7.4

Divide and simplify radical expressions. Rationalize denominators.

Section 7.5

Add and subtract radical expressions. Find products of two or more radical terms. Rationalize denominators with two terms that contain radicals. Multiply or divide radical expressions with different indices. Use functions containing radical expressions.

Section 7.6

Solve radical equations using the principle of powers. Solve equations with two radical terms. Find the value of x when given a function of x containing radicals.

Section 7.7

Use the Pythagorean Theorem. Solve applications using the Pythagorean Theorem. Use the distance formula. Use the midpoint formula.

Section 7.8

Rewrite expressions in terms of i. Add and subtract complex numbers. Multiply complex numbers. Divide using conjugates. Simplify powers of i.

Section 8.1

Solve quadratic equations using the principle of square roots. Complete the square. Solve quadratic equations by completing the square. Find x-intercepts. Solve applications using quadratic equations.

Section 8.2

Solve equations using the quadratic formula.

Section 8.3

Determine type and numbers of solutions of quadratic equations. Write a quadratic equation having given solutions. Write a third-degree equation having given solutions.

Section 8.4

Solve applications involving quadratic equations. Solve formulas for the indicated variable. Solve applications involving formulas.

Section 8.6

Graph quadratic functions. Find the vertex, axis of symmetry, and minimum or maximum value.

Section 8.7

Complete the square to write a function as $f(x) = a(x-h)^2 + k$. Find characteristics of a quadratic function, and graph. Find x- and y-intercepts of a quadratic function.

Section 8.8

Solve maximum and minimum problems. Determine the type of function to model data. Find a quadratic equation that fits a set of data points.

Section 9.2

Graph exponential functions. Solve applications involving exponential functions.

Section 9.6

Solve exponential equations.

Section 9.3

Simplify logarithms. Graph logarithmic functions. Rewrite exponential equations in logarithmic form. Solve logarithmic equations.

Section 9.5

Use a calculator to find common logarithms. Find logarithms using the change-of-base formula. Graph natural logarithmic functions.

Section 10.1

Find the equation of a circle given the center and radius. Find the equation of a circle given the center and a point on the circle. Find the center and radius of a circle in standard form and graph. Find the center and radius of a circle not in standard form and graph.