Chapter 1: Foundations

1.1 Introduction to Whole Numbers

- Place Values and Rounding
  - Identify the place value of a digit and write a whole number using words or digits
  - Round whole numbers
- Prime Factorization and Least Common Multiples
  - Identify multiples and apply divisibility tests
  - Find the prime factorization of a number
  - Find the least common multiple of two numbers (20)

1.2 Use the Language of Algebra

- Use Variables and Algebraic Symbols
  - Translate algebraic expressions, equations, and inequalities into English and recognize expressions and equations
  - Evaluate a whole number raised to a power and understand the terminology
- Order of Operations and Simplifying Expressions
  - Simplify an expression using order of operations
  - Evaluate an expression
  - Identify coefficients and identify and combine like terms
- Rewrite English Phrases into Algebraic Expressions
  - Translate an English phrase to an algebraic expression
  - Translate English phrases from applications into algebraic expressions

1.3 Add and Subtract Integers

- Introduction to Integers and Absolute Value
  - Order integers using inequality symbols and determine the opposite of integers or variables
  - Evaluate an absolute value expression
  - Simplify an expression involving absolute value using order of operations
- Adding and Subtracting Integers
  - Add integers
  - Subtract integers
  - Add and subtract integers using order of operations

1.4 Multiply and Divide Integers

- Multiplying and Dividing Integers
  - Multiply integers
  - Divide integers
- Simplifying Expressions with Integers
  - Simplify expressions with integers using order of operations
  - Evaluate a variable expression with integers
- Algebraic Expressions and Applications with Integers
  - Translate an English phrase to an algebraic expression with integers
  - Use integers in applications
1.5 Visualize Fractions
   ● Simplifying Fractions
     ● Identify when fractions are equivalent (20)
     ● Simplify a fraction
   ● Multiplying and Dividing Fractions
     ● Multiply fractions (20)
     ● Divide fractions (20)
     ● Simplify complex fractions (20)
   ● Understanding Expressions with Fractions
     ● Simplify expressions written with a fraction bar
     ● Translate an English phrase to an expression with fractions

1.6 Add and Subtract Fractions
   ● Adding and Subtracting Fractions
     ● Add or subtract fractions with a common denominator
     ● Add or subtract fractions with different denominators
   ● Algebraic Expressions with Fractions
     ● Use the order of operations to simplify complex fractions and expressions with multiple operations
     ● Evaluate variable expressions with fractions

1.7 Decimals
   ● Understanding and Rounding Decimals
     ● Name and write decimals (20, 20)
     ● Round decimals (20)
   ● Operations with Decimals
     ● Add and subtract decimals
     ● Multiply decimals (20)
     ● Divide decimals (20)
   ● Decimals, Fractions, and Percents
     ● Convert between fractions and decimals (20)
     ● Simplify expressions with fractions and decimals (20)
     ● Convert between decimals and percents (20, 20)

1.8 Square Roots and the Real Number System
   ● Square Roots and the Real Number System
     ● Evaluate a square root
     ● Identify rational and irrational numbers (20)
     ● Identify real numbers
   ● Fractions and Decimals on the Number Line
     ● Locate fractions on a number line and write inequality statements involving fractions
     ● Locate decimals on a number line and write inequality statements involving decimals

1.9 Properties of Real Numbers
   ● Properties of the Real Number System
     ● Use the commutative and associative properties
     ● Identify additive and multiplicative inverses of a number
- Understand the multiplication and division properties of zero
- Simplify expressions using properties of identities, inverses, and zero
- The Distributive Property
  - Simplify expressions using the distributive property
  - Simplify expressions by distributing a negative number
1.10 Systems of Measurements
- Unit Conversion in the US System
  - Make unit conversions in the US system
  - Use mixed units of measurement in the US system
- Unit Conversion in the Metric System
  - Make unit conversions in the metric system
  - Use mixed units of measurement in the metric system
- Unit Conversion Between Systems
  - Convert between the US and metric systems of measurement
  - Convert between Fahrenheit and Celsius temperatures

Chapter 2: Solving Linear Equations and Inequalities
2.1 Solve Equations Using the Subtraction and Addition Properties of Equality
- Solve Equations with the Subtraction and Addition Properties of Equality
  - Verify a solution of an equation (20)
  - Solve an equation using the subtraction and addition properties of equality (20, 20)
  - Solve an equation involving fractions or decimals using the subtraction and addition properties of equality (20, 20)
  - Solve an equation that requires simplification using the subtraction and addition properties of equality
- Application Problems and the Subtraction and Addition Properties of Equality
  - Translate an English sentence to an algebraic equation and solve using the subtraction and addition properties of equality
  - Use the subtraction and addition properties of equality to solve application problems
2.2 Solve Equations Using the Division and Multiplication Properties of Equality
- Solve Equations with the Division and Multiplication Properties of Equality
  - Solve an equation using the division and multiplication properties of equality (20, 20)
  - Solve an equation involving fractions or decimals using the division and multiplication properties of equality (20, 20)
  - Solve an equation that requires simplification using the division and multiplication properties of equality (20)
- Application Problems and the Division and Multiplication Properties of Equality
  - Translate an English sentence to an algebraic equation and solve using the division and multiplication properties of equality
  - Use the division and multiplication properties of equality to solve application problems
2.3 Solve Equations with Variables and Constants on Both Sides
- Solving Linear Equations
  - Solve an equation with constants on both sides (20)
- Solve an equation with variables on both sides (20)
- Solve an equation with constants and variables on both sides (20)

2.4 Use a General Strategy to Solve Linear Equations
- General Strategies for Solving Linear Equations
  - Solve an equation using the distributive property with variables on one side (20)
  - Solve an equation using the distributive property with variables on both sides (20)
  - Classify equations as conditional, identity, or a contradiction

2.5 Solve Equations with Fractions or Decimals
- Solving Linear Equations with Fractions
  - Solve an equation involving fractions with variables on both sides (20)
  - Solve an equation involving fractions by eliminating the fractions (20)
  - Solve an equation involving fractions by eliminating the fractions and other steps (20)
- Solving Linear Equations with Decimals
  - Solve an equation involving decimals with variables on both sides (20)
  - Solve an equation involving decimals by clearing the decimals (20)

2.6 Solve a Formula for a Specific Variable
- Distance, Rate, and Time and Literal Equations
  - Use the distance, rate, and time formula
  - Solve a formula for a specific variable

2.7 Solve Linear Inequalities
- Inequalities, the Number Line, and Interval Notation
  - Graph an inequality on the number line
  - Express an inequality using interval notation (20)
- Solving One-Step Linear Inequalities
  - Solve an inequality using the subtraction and addition properties of inequality (20)
  - Solve an inequality using the division and multiplication properties of inequality (20)
- Solving Linear Inequalities
  - Solve an inequality that requires simplification
  - Classify an inequality as conditional, identity, or contradiction (20)
  - Translate an English sentence into an inequality and solve (20)

2.8 Solve Compound Inequalities
- Solving Compound Inequalities
  - Solve a compound inequality involving intersections
  - Solve a compound inequality involving unions
  - Solve applications with compound inequalities (20)

2.9 Solve Absolute Value Equations and Inequalities
- Solving Absolute Value Equations and Inequalities
  - Solve an absolute value equation (20)
  - Solve an absolute value inequality involving "less than" (40)
  - Solve an absolute value inequality involving "greater than"
  - Solve applications with absolute value (40)
Chapter 3: Math Models

3.1 Use a Problem-Solving Strategy
- An Introduction to Problem Solving
- Use a problem-solving strategy for word problems
- Solve a number problem
- Solve a number problem involving consecutive integers (20)

3.2 Solve Percent Applications
- Percent Problems and Percent Increase and Decrease
- Translate and solve basic percent equations (20, 20)
- Solve basic applications of percent
- Find percent increase or percent decrease
- Simple Interest and Discounts
- Solve applications involving the simple interest formula
- Solve applications with discount or mark-up

3.3 Solve Mixture Applications
- Solve Mixture Word Problems
- Solve coin word problems
- Solve ticket and stamp word problems
- Use the mixture model to solve word problems

3.4 Solve Geometry Applications - Triangles, Rectangles, and the Pythagorean Theorem
- Triangles and the Pythagorean Theorem
- Solve problems involving the perimeter, area, and interior angles of triangles
- Solve triangle problems where angles or sides are given in terms of other angles or sides (20)
- Solve triangle problems using the Pythagorean Theorem
- Area and Perimeter of Rectangles
- Solve problems involving the perimeter and area of rectangles
- Solve rectangle problems when the width is given in terms of the length

3.5 Solve Uniform Motion Applications
- Uniform Motion
- Solve uniform motion applications

3.6 Solve Applications with Linear Inequalities
- Problem Solving with Linear Inequalities
- Solve one-step applications with linear inequalities
- Solve applications with linear inequalities

Chapter 4: Graphs and an Introduction to Functions

4.1 Use the Rectangular Coordinate System
- Reading Graphs and the Rectangular Coordinate System
- Plot points on a rectangular coordinate system
- Verify the solution to an equation in two variables (20)
- Complete a table of solutions to a linear equation in two variables
- Find solutions to a linear equation (20)
4.2 Graph Linear Equations in Two Variables
- Graphing Linear Equations
  - Recognize the relationship between the solutions of an equation and its graph
  - Graph a linear equation by plotting points
- Graph a linear equation in standard form by plotting points (20)
- Graph vertical and horizontal lines

4.3 Graph with Intercepts
- Intercepts on the Coordinate Plane
  - Identify the x- and y-intercepts on a graph
  - Find the x- and y-intercepts from an equation of a line (20)
  - Graph a line using the x- and y-intercepts

4.4 Understand Slope of a Line
- Understanding Slope
  - Use a geoboard to model slope
  - Use the relationship between rise and run to find the slope of a line from its graph
  - Find the slope of horizontal and vertical lines (20)
- The Slope Formula
  - Use the slope formula to find the slope of a line between two points (20)
  - Graph a line given a point and the slope
  - Determine the slope in applications (20)

4.5 Use the Slope-Intercept Form of an Equation of a Line
- Slope-Intercept Form
  - Identify the slope and y-intercept from an equation of a line and relate a graph to the equation
  - Graph a line given its equation using its slope and y-intercept
  - Graph lines using a variety of methods
  - Graph and interpret applications of slope-intercept
- Parallel and Perpendicular Lines
  - Use slopes to identify parallel lines (20)
  - Use slopes to identify perpendicular lines (20)

4.6 Find the Equation of a Line
- Equations of Lines
  - Find an equation of the line given the slope and y-intercept (20)
  - Find an equation of the line given the slope and a point (20)
  - Find an equation of the line given two points (20)
- Equations of Parallel and Perpendicular Lines
  - Find an equation of a line parallel to a given line (20)
  - Find an equation of a line perpendicular to a given line (20)

4.7 Graphs of Linear Inequalities
- Graphing Linear Inequalities
  - Verify solutions to an inequality in two variables (20)
• Recognize the relationship between the solutions of an inequality and its graph
• Graph a linear inequality

4.8 Relations and Functions
• Introduction to Functions
  • Find the domain and range of a relation (20)
  • Determine if a relation is a function given a set of ordered pairs or a mapping (20)
  • Determine if a relation is a function given an equation (20)
• Function Notation
  • Use function notation to find the value of a function given a number (20)
  • Use function notation to find the value of a function given a variable expression (20)

4.9 Graphs of Functions
• The Vertical Line Test and Graphs of Functions
  • Use the vertical line test to determine if a graph represents a function
  • Identify graphs of basic functions
  • Read information from the graph of a function

Chapter 5: Systems of Linear Equations
5.1 Solve Systems of Equations by Graphing
• Solving Systems of Linear Equations by Graphing
  • Determine whether an ordered pair is a solution of a system of linear equations (20)
  • Solve a system of linear equations by graphing
  • Determine the number of solutions of a linear system (20)
  • Solve applications of systems of linear equations by graphing

5.2 Solve Systems of Equations by Substitution
• Solving Systems of Linear Equations by Substitution
  • Solve a system of linear equations by substitution
  • Solve applications of systems of linear equations by substitution (20)

5.3 Solve Systems of Equations by Elimination
• Solving Systems of Linear Equations by Elimination
  • Solve a system of linear equations by elimination
  • Solve applications of systems of equations by elimination (20)
  • Solve a system of linear equations using a variety of methods (20)

5.4 Solve Applications with Systems of Equations
• Systems of Linear Equations and Problem Solving
  • Translate a word problem to a system of equations
  • Solve a word problem using a system of equations
  • Solve an application in geometry using a system of equations
  • Solve uniform motion applications using a system of equations

5.5 Solve Mixture Applications with Systems of Equations
• Mixture Problems and Systems of Equations
  • Solve mixture applications involving tickets or money with a system of equations
  • Solve mixture applications involving concentrations using a system of equations
  • Solve interest applications using a system of equations
5.6 Solve Systems of Equations with Three Variables
- Solving Systems of Linear Equations in Three Variables
  - Determine whether an ordered triple is a solution of a system of three linear equations with three variables (20)
  - Solve a system of linear equations with three variables (20)
  - Identify inconsistent and dependent systems of equations with three variables (20)
  - Solve applications using systems of linear equations in three variables

5.7 Solve Systems of Equations Using Matrices
- Solving Systems of Linear Equations with Matrix Row Operations
  - Write the augmented matrix for a system of equations
  - Use row operations on a matrix (20)
  - Solve a system of equations using matrices (20)

5.8 Solve Systems of Equations Using Determinants
- Determinants of Matrices
  - Evaluate the determinant of a 2x2 matrix (20)
  - Evaluate the minor of an element in a 3x3 matrix (20)
  - Evaluate the determinant of a 3x3 matrix (20)
- Solving Systems of Linear Equations with Cramer's Rule and Determinants
  - Use Cramer's Rule to solve systems of equations in two variables (20)
  - Use Cramer's Rule to solve systems of equations in three variables (20)
  - Use determinants to determine if three given points are collinear (20)

5.9 Graphing Systems of Linear Inequalities
- Solving Systems of Linear Inequalities
  - Determine whether an ordered pair is a solution of a system of linear inequalities (20)
  - Solve a system of linear inequalities by graphing
  - Solve applications of systems of linear inequalities

Chapter 6: Polynomials
6.1 Add and Subtract Polynomials
- Adding and Subtracting Polynomials
  - Identify the types and degrees of polynomials (20, 20)
  - Add and subtract monomials (20)
  - Add and subtract polynomials (20)
  - Evaluate a polynomial for a given value (20)

6.2 Use Multiplication Properties of Exponents
- Product Properties of Exponents
  - Simplify numerical expressions containing exponents (20)
  - Simplify expressions using the product property for exponents (20)
  - Simplify expressions using the power property for exponents or the product to a power property for exponents (20)
  - Simplify expressions by applying several properties
6.3 Multiply Polynomials
- Multiplying Polynomials
  - Multiply monomials (20)
  - Multiply a polynomial by a monomial
  - Multiply a binomial by a binomial (20)
  - Multiply a trinomial by a binomial (20)

6.4 Special Products
- Special Products of Binomials
  - Square a binomial using the binomial squares pattern (20)
  - Multiply conjugates using the product of conjugates pattern (20)
  - Recognize and use the appropriate special product pattern

6.5 Divide Monomials
- Quotient Properties of Exponents and Dividing Monomials
  - Simplify expressions using the quotient property for exponents and the exponent of zero (20)
  - Simplify expressions using the quotient to a power property (20)
  - Simplify expressions by applying several quotient properties of exponents
  - Divide monomials (20)

6.6 Divide Polynomials
- Dividing Polynomials
  - Divide a polynomial by a monomial (20)
  - Divide a polynomial by a binomial using polynomial long division (20)
- Synthetic Division and the Remainder and Factor Theorems
  - Use synthetic division to divide polynomials (20)
  - Use the remainder and factor theorems (20, 20)

6.7 Integer Exponents and Scientific Notation
- Negative Exponents
  - Use the definition of a negative exponent (20)
  - Simplify expressions with integer exponents (20)
- Scientific Notation
  - Convert from decimal notation to scientific notation (20)
  - Convert from scientific notation to decimal notation (20)
  - Multiply and divide using scientific notation (20, 20)

Chapter 7: Factoring
7.1 Greatest Common Factor and Factor by Grouping
- The Greatest Common Factor and Factoring by Grouping
  - Find the greatest common factor of two or more expressions (20)
  - Factor the greatest common factor from a polynomial (20)
  - Factor a polynomial by grouping (20)

7.2 Factor Quadratic Trinomials with Leading Coefficient 1
- Factoring Trinomials with a Leading Coefficient of 1
  - Factor a trinomial of the form $x^2+bx+c$ where $c$ is positive (20)
  - Factor a trinomial of the form $x^2+bx+c$ where $c$ is negative (20)
7.3 Factor Quadratic Trinomials with Leading Coefficient Other than 1

- Factoring Trinomials with a Leading Coefficient Other than 1
- Factor a trinomial of the form ax^2+bx+c with a GCF (20)
- Factor a trinomial using trial and error
- Factor a trinomial using the 'ac' method (20)

7.4 Factor Special Products

- Factoring Special Products
  - Factor a perfect square trinomial (20)
  - Factor a difference of squares (20)
  - Factor sums and differences of cubes (20, 20)
  - Factor polynomials by combining the difference of squares and perfect square trinomial patterns

7.5 General Strategy for Factoring Polynomials

- Choosing a Factoring Strategy
  - Recognize and use the appropriate method to factor a polynomial completely

7.6 Quadratic Equations

- Solving Quadratic Equations by Factoring
  - Solve a factored quadratic equation using the zero product property (20)
  - Solve a quadratic equation by factoring (20)
  - Solve applications modeled by quadratic equations

7.7 Polynomial Equations

- Solving Polynomial Equations by Factoring
  - Use the zero product property to solve a factored polynomial equation (20)
  - Solve polynomial equations by factoring (20, 17)
  - Find zeros and intercepts of a polynomial function by factoring (40)
  - Use factoring to solve application problems involving polynomial equations (40)

Chapter 8: Rational Expressions and Equations

8.1 Simplify Rational Expressions

- Domain of Rational Expressions and Simplifying Rational Expressions
- Determine the values for which a rational expression is undefined (20)
- Evaluate a rational expression (20)
- Simplify a rational expression (20)
- Simplify a rational expression with opposite factors (20)

8.2 Multiply and Divide Rational Expressions

- Multiplying and Dividing Rational Expressions
  - Multiply rational expressions (20)
  - Divide rational expressions (20)
  - Multiply and divide more than two rational expressions (20)

8.3 Add and Subtract Rational Expressions with a Common Denominator

- Adding and Subtracting Rational Expressions with a Common Denominator
  - Add rational expressions with a common denominator (20)
● Subtract rational expressions with a common denominator (20)
● Add and subtract rational expressions whose denominators are opposites (20)

8.4 Add and Subtract Rational Expressions with Unlike Denominators
● Adding and Subtracting Rational Expressions with Unlike Denominators
● Find the least common denominator of rational expressions (20)
● Find equivalent rational expressions (20)
● Add rational expressions with different denominators (20)
● Subtract rational expressions with different denominators (20)

8.5 Simplify Complex Rational Expressions
● Simplifying Complex Fractions
● Simplify a complex rational expression by writing it as division (20)
● Simplify a complex rational expression by using the LCD

8.6 Solve Rational Equations
● Solving Rational Equations
● Solve a rational equation that results in a linear equation
● Solve a rational equation that results in a quadratic equation
● Solve a rational equation for a specific variable

8.7 Solve Proportion and Similar Figure Applications
● Proportions and Problem Solving with Rational Equations
● Solve proportions (20)
● Solve applications with proportions
● Solve similar figure applications

8.8 Solve Uniform Motion and Work Applications
● Uniform Motion, Work, and Problem Solving
● Solve uniform motion applications involving rational equations
● Solve problems involving rates of work using rational equations

8.9 Use Direct and Inverse Variation
● Variation and Problem Solving
● Solve direct variation problems
● Solve inverse variation problems

8.10 Solve Rational Inequalities
● Solving Rational Inequalities
● Find the solution set of a rational inequality
● Solve an inequality with rational functions (40)

Chapter 9: Roots and Radicals
9.1 Simplify and Use Square Roots
● Understanding Square Roots
● Simplify expressions with square roots (20)
● Estimate square roots and approximate square roots (20, 20)
● Simplify variable expressions with square roots (20)
9.2 Simplify Square Roots
- Simplifying Square Root Expressions
  - Use the product property to simplify square roots
  - Use the quotient property to simplify a perfect square fraction (20)
  - Use the quotient property to simplify square roots

9.3 Add and Subtract Square Roots
- Adding and Subtracting Square Root Expressions
  - Add and subtract like square roots (20)
  - Add and subtract square roots that need simplification (20)

9.4 Multiply Square Roots
- Multiplying Square Root Expressions
  - Multiply square roots (20)
  - Use polynomial multiplication to multiply square roots (20)
  - Use special product formulas to multiply square roots (20)

9.5 Divide Square Roots
- Dividing Square Root Expressions and Rationalizing Denominators
  - Divide square roots (20)
  - Rationalize a one-term denominator (20)
  - Rationalize a two-term denominator (20)

9.6 Solve Equations with Square Roots
- Solving Radical Equations
  - Solve a square root equation with a single radical (20)
  - Solve a square root equation with two radicals (20)
  - Use square roots in applications

9.7 Higher Roots
- Understanding Higher Roots
  - Simplify numerical expressions with higher roots
  - Simplify expressions with higher roots (20)
- Simplifying Higher Roots and Operations on Higher Roots
  - Use the product property to simplify expressions with higher roots
  - Use the quotient property to simplify expressions with higher roots
  - Add and subtract higher roots (20)

9.8 Rational Exponents
- Simplifying Expressions with Rational Exponents
  - Simplify expressions with rational exponents and a numerator of 1 (20)
  - Simplify expressions with rational exponents and a numerator greater than 1 (20)
  - Use the laws of exponents to simplify expressions with rational exponents
- Solve Equations with Radicals or Rational Exponents
  - Solve a radical equation with a single radical or an equation with a rational exponent (20)
  - Solve a radical equation with two radicals (20)
  - Solve application problems involving radical equations
9.9 Use Radicals in Functions
- Radical Functions
  - Evaluate a radical function (20)
  - Find the domain of a radical function
  - Graph a radical function by plotting points and determine its range

9.10 Use the Complex Number System
- Introduction to Complex Numbers
  - Evaluate the square root of a negative number and understand the complex number system (20)
  - Add or subtract complex numbers (20)
- Multiplying and Dividing Complex Numbers and Powers of i
  - Multiply complex numbers (20)
  - Multiply two complex conjugates (20)
  - Divide complex numbers (20)
  - Simplify powers of i (20)

Chapter 10: Quadratic Equations
10.1 Solve Quadratic Equations Using the Square Root Property
- Solving Quadratic Equations Using the Square Root Property
  - Solve a quadratic equation using the square root property (20)
  - Solve a quadratic equation with a binomial as the quadratic term using the square root property
  - Solve a quadratic equation where factoring results in a perfect square binomial

10.2 Solve Quadratic Equations by Completing the Square
- Solving Quadratic Equations by Completing the Square
  - Complete the square of a binomial expression (20)
  - Solve a quadratic equation with a leading coefficient of 1 by completing the square (20)
  - Solve a quadratic equation with a leading coefficient greater than 1 by completing the square (20)

10.3 Solve Quadratic Equations Using the Quadratic Formula
- Solving Quadratic Equations with the Quadratic Formula
  - Solve a quadratic equation using the quadratic formula with 2 real solutions (20)
  - Solve a quadratic equation using the quadratic formula with 1 or 0 real solutions (20)
  - Use the discriminant to predict the number of solutions of a quadratic equation (20)

10.4 Solve Quadratic Equations in Quadratic Form
- Solving Equations by Using Quadratic Methods
  - Solve an equation in quadratic form by using substitution (40)
  - Solve an equation in quadratic form with rational or negative exponents by using substitution (40)

10.5 Solve Applications Modeled by Quadratic Equations
- Problem Solving with Quadratic Equations
  - Solve applications modeled by quadratic equations that may require the quadratic formula
  - Solve geometric applications that may require the quadratic formula
10.6 Graph Quadratic Functions Using Properties

- Parabolas and Their Properties
  - Graph a quadratic function by plotting points and determine the direction a parabola opens
  - Determine the axis of symmetry and vertex of a parabola given a function (20)
  - Determine the intercepts of a parabola given a function (20)

- Graphing Quadratic Functions
  - Graph a quadratic function by finding key points
  - Determine the minimum or maximum of a quadratic function and use it in applications (40)

10.7 Graph Quadratic Functions Using Transformations

- Transformations of Parabolas
  - Graph a quadratic function using a vertical translation
  - Graph a quadratic function using a horizontal translation
  - Graph a quadratic function by compression, stretching, or reflecting

- Graphing Quadratic Functions Using Transformations
  - Rewrite a quadratic in vertex form and graph it using transformations
  - Find a quadratic function given its graph

10.8 Solve Quadratic Inequalities

- Solving Quadratic Inequalities
  - Solve a quadratic inequality graphically
  - Solve a quadratic inequality algebraically (40)

Chapter 11: Exponential and Logarithmic Functions

11.1 Finding Composite and Inverse Functions

- Composite Functions
  - Perform a composition of functions (20)
  - Evaluate a composition of functions for a specific value (20)

- One-to-One Functions
  - Determine whether a function is one-to-one given a set of ordered pairs
  - Use the horizontal line test to determine whether a graph represents a one-to-one function

- Inverse Functions
  - Find the inverse of a function given a set of ordered pairs or a graph (40)
  - Verify that two functions are inverses of each other (40)
  - Find the inverse of a function algebraically (40)

11.2 Evaluate and Graph Exponential Functions

- Graphing Exponential Functions
  - Graph an exponential function and understand its properties
  - Graph an exponential function using transformations
  - Evaluate an exponential function with base e and understand the natural base (40)

- Applications with Exponential Functions
  - Use the one-to-one property of exponential equations to solve an exponential equation (40)
  - Use the compound interest formula to find the new value of an account (40)
  - Use the continuously compounding interest formula to find the new value of an account (40)
  - Calculate resultant values using exponential growth and decay models (40)
11.3 Evaluate and Graph Logarithmic Functions
- Introduction to Logarithms
  - Convert between exponential and logarithmic form (20, 20)
  - Evaluate a logarithmic function (20)
- Logarithmic Functions and Applications
  - Graph a logarithmic function and understand its properties
  - Solve a logarithmic equation by rewriting the equation in exponential form (20)
  - Use logarithmic models in applications (40)

11.4 Use the Properties of Logarithms
- Understanding the Properties of Logarithms
  - Use basic properties of logarithms and the inverse properties of logarithms (40)
  - Use the product, quotient, and power properties of logarithms (40)
- Using the Properties of Logarithms
  - Use the properties of logarithms to expand a logarithmic expression (40)
  - Use the properties of logarithms to condense a logarithmic expression (40)
  - Use the change-of-base formula for logarithms (20)

11.5 Solve Exponential and Logarithmic Equations
- Solving Logarithmic Equations
  - Use the one-to-one property of logarithmic equations to solve logarithmic equations (40)
  - Use the properties of logarithms to solve logarithmic equations (40)
- Solving Exponential Equations and Applications
  - Solve exponential equations using logarithms (40)
  - Solve for amounts other than a new balance with the compound or continuously compounding interest formula (40)
  - Use the exponential growth and decay models to find values other than the resultant value (40)

Chapter 12: Conics
12.1 Distance and Midpoint Formulas and Circles
- The Distance and Midpoint Formulas
  - Use the distance formula to find the distance between two points (20)
  - Use the midpoint formula to find the midpoint between two points
- The Equation of Circles
  - Write the standard form of the equation of a circle given its center and radius (20)
  - Write the standard form of the equation of a circle given its center and a point on the circle (20)
  - Graph a circle given its equation in standard form
  - Rewrite the equation of a circle given in general form by completing the square

12.2 Parabolas
- Parabolas as Conic Sections and Applications
  - Graph a vertical parabola given the equation in general or standard form
  - Graph a horizontal parabola given the equation in general form
Graph a horizontal parabola given the equation in standard form
Solve applications with parabolas

12.3 Ellipses
- Ellipses with Centers at the Origin
  - Graph an ellipse with its center at the origin
  - Find the equation of an ellipse with its center at the origin
- Ellipses with Centers Not at the Origin and Applications
  - Graph an ellipse with its center not at the origin
  - Rewrite the equation of an ellipse given in general form by completing the square
  - Solve applications with ellipses

12.4 Hyperbolas
- Hyperbolas as Conic Sections
  - Graph a hyperbola with its center at the origin
  - Graph a hyperbola with its center not at the origin
  - Rewrite the equation of a hyperbola given in general form by completing the square
- Identifying Conic Sections by Their Equations
  - Identify conic sections by their equations

12.5 Solve Systems of Nonlinear Equations
- Solving Systems of Nonlinear Equations
  - Solve a system of nonlinear equations by graphing
  - Solve a system of nonlinear equations using substitution (40)
  - Solve a system of nonlinear equations using elimination (40)
- Problem Solving with Systems of Nonlinear Equations
  - Use a system of nonlinear equations to solve applications (40)

Chapter 13: Sequences, Series, and the Binomial Theorem
13.1 Sequences
- Introduction to Sequences
  - Write the first few terms of a sequence (20)
  - Find a formula for the general term of a sequence (20)
- Factorial Notation and Sigma Notation
  - Use factorial notation (20)
  - Find the partial sum (20)
  - Use summation notation to write a sum (20)

13.2 Arithmetic Sequences and Series
- Arithmetic Sequences and Series
  - Determine if a sequence is arithmetic and write the first few terms of an arithmetic sequence (20)
  - Find the general term of an arithmetic sequence (20)
  - Find the sum of the first n terms of an arithmetic sequence (20)
13.3 Geometric Sequences and Series
- Geometric Sequences
  - Determine if a sequence is geometric and write the first few terms of a geometric sequence (20)
  - Find the general term of a geometric sequence (20)
- Finite and Infinite Geometric Series and Applications
  - Find the sum of the first n terms of a geometric sequence (20)
  - Find the sum of an infinite geometric series and use infinite geometric series to write a repeating decimal as a fraction (20, 20)
  - Use geometric sequences and series to solve monetary applications including annuities (40)

13.4 Binomial Theorem
- The Binomial Theorem
  - Use Pascal's Triangle to expand a binomial (20)
  - Evaluate a binomial coefficient (20)
  - Use the binomial theorem to expand a binomial (20)