**Materials needed:** Pencil, note packet and check points (given at the beginning of each lap), Algebra and Trigonometry by Blitzer, graph paper and scratch paper if desired, NO Calculator

**Rationale**: Formulas can be used to explain what is happening in the present and to make predictions about what might occur in the future. In this lap you will learn to use formulas and graphs in new ways that will help you to recognize patterns, logic, and order in a world that can appear chaotic to the untrained eye.

**Essential Question:**

How are the properties of real numbers useful when solving equations and simplifying expressions? What are the similarities and differences in the procedures for solving and expressing the solutions of equations and inequalities? Why is it important to understand how to solve linear equations and inequalities?

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| **Date** | **Lesson and Objectives** | **Practice Problems** |
|  | Section 1.1 Graphs and Graphing Utilities  Objectives   * Plot Points in the rectangular coordinate system * Graph equations in the rectangular coordinate system * Use a graph to determine intercepts * Interpret information given by graphs | Work on your Check Points  Practice Problems  Page 97 #4, 7, 9-12, 14, 20, 21, 23, 27, 41-46, 47-55 odd, 79-82 |
|  | Section 1.2 Linear Equations and Rational Equations  Objectives   * Solve linear equations in one variable. * Solve linear equations containing fractions * Solve rational equations with variables in the denominator * Recognize identities, conditional equations, and inconsistent equations * Solve applied problems using mathematical models | Work on your Check Points  Practice Problems  Page 112 #7, 11, 13, 15, 21, 23, 26, 35, 40, 43, 49, 55, 59, 63, 67, 86 |
|  | Section 1.3 Models and Applications  Objectives   * Use Linear equations to solve problems * Solve a formula for a variable. | Work on your Check Points  Practice Problems  Page 126 #1,3,5,9,13,17,22,23,27,33,37,39,43,55-69 odd |
|  | Quiz 1 | Section 1.1, 1.2, and 1.3 practice problems must be complete before you can take the quiz. |
|  | Section 1.4 Complex Numbers  Objectives   * Add and Subtract complex numbers * Multiply complex numbers * Divide complex numbers * Perform operations with square roots of negative numbers | Work on your Check Points  Practice Problems  Page 135 #2, 6, 10, 14, 18, 20, 21-27 odd, 31, 35, 37,39, 45, 47, 53, 75 |
|  | Section 1-5 Quadratic Equations  Objectives   * Solve quadratic equations by factoring * Solve quadratic equations by the square root property * Solve Quadratic equations by completing the square * Solve quadratic equations by using the quadratic formula * Use the discriminant to determine the number and type of solutions * Solve problems modeled by quadratic equations | Work on your Check Points  Practice Problems  Page 152 #3,11,19, 29, 42, 44, 51, 59, 67, 72, 79, 81, 115, 133, 138, 140, 149 |
|  | Section 1.6 Types of Equations  Objectives   * Solve polynomial equations by factoring * Solve radical equations * Solve equations with rational exponents * Solve equations that are quadratic in form * Solve equations involving absolute values | Work on your Check Points  Practice Problems  Page 168 #2,4,10,14,21,23,27, 35, 37, 43, 47, 49, 55, 62, 71, 73, 75, 77,91 |
|  | Quiz 2 | Section 1.4, 1.5, and 1.6 practice problems must be complete before you can take the quiz. |
|  | Section 1.7 Linear Inequalities and Absolute Value Inequalities  Objectives   * Use interval notation * Find intersections and unions of intervals * Solve linear inequalities * Recognize inequalities with no solution or all real numbers as solutions * Solve compound inequalities * Solve absolute value inequalities | Work on your Check Points  Practice Problems  Page 185 #1, 5, 7, 13, 16, 18, 28, 32, 35, 41, 47, 50, 52, 58, 61, 65, 73, 79, 89 |
|  | Section 2.1 Basics of Functions and Their Graphs  Objectives   * Find the domain and range of a relation * Determine whether a relation is a function * Determine whether an equation represents a function * Evaluate a function * Use the vertical line test to identify functions * Obtain information about a function from its graph * Identify the domain and range of a function from its graph. * Identify intercepts from a functions’ graph. | Work on your Check Points  Practice Problems  Page 210 #1, 3, 10, 17, 19, 21, 23, 29, 31, 33, 55-64, 71-76, 79,81, 83, 89, 91, 122-125 |
|  | Section 2.2 More on Functions and Their Graphs  Objectives   * Identify intervals on which a function increases, decreases, or is constant * Use graphs to locate relative maxima or minima * Identify even or odd functions and recognize their symmetries. * Understand and use piecewise functions. * Find and simplify a function’s difference quotient | Work on your Check Points  Practice Problems  Page 223 #2, 4,8,16, 17, 19, 21, 29-32, 33, 40, 41, 47, 49, 57, 67, 77, 81 (no graph), 83, 85, 87 |
|  | Quiz 3 | Section 1.7, 2.1, and 2.2 practice problems must be complete before you can take the quiz. |
|  | Review/Practice Test | An answer key will be provided for the Practice Test after completion. |
|  | Lap 1 Test – in the testing center | All practice problems and quizzes must be completed before you may take this test. |