Algebra 1 Sem 2

1. Exponential Functions
   1. Exponential Growth Functions
      1. Instruction
      2. Assignment
         1. Practice with exponential growth functions.
      3. Quiz
   2. Exponential Decay Functions
      1. Instruction
         1. What does it mean to decay exponentially?
      2. Assignment
         1. Practice with exponential decay.
      3. Quiz
   3. Vertical Stretches and Shrinks of Exponential Functions
      1. Instruction
         1. How does a constant in front of the base change the graph of an exponential function?
      2. Assignment
         1. Practice analyzing stretches and shrinks of exponential functions.
      3. Quiz
   4. Reflections of Exponential Functions
      1. Instruction
         1. What is the relationship between reflecting an exponential function over an axis and its equation?
      2. Assignment
         1. Practice graphing and analyzing functions reflected across the x-axis and y-axis.
      3. Quiz
   5. Translations of Exponential Functions
      1. Instruction
         1. How does adding a constant to an exponential function change its graph?
      2. Assignment
         1. Practice translating exponential functions.
      3. Quiz
   6. Exponential Functions with Radical Bases
      1. Instruction
         1. What does the graph of an exponential function with an irrational base look like?
      2. Assignment
         1. Practice with exponential functions that have irrational bases.
      3. Quiz
   7. Geometric Sequences
      1. Instruction
         1. What is an exponential function that has the natural numbers as its domain?
      2. Assignment
         1. Practice analyzing geometric sequences.
      3. Quiz
   8. **Unit Test - (Must be taken in Person)**
      1. Unit Test Review
2. Polynomial Expressions
   1. Introduction to Polynomials
      1. Instruction
         1. What is a polynomial?
      2. Assignment
         1. Practice identifying and classifying polynomials and their equivalent forms.
      3. Quiz
   2. Adding and Subtracting Polynomials
      1. Instruction
         1. How is adding and subtracting polynomials like adding and subtracting numbers?
      2. Assignment
         1. Practice adding and subtracting polynomials.
      3. Quiz
   3. Multiplying Monomials and Binomials
      1. Instruction
         1. What does the product of polynomials look like?
      2. Assignment
         1. Practice multiplying monomials and binomials.
      3. Quiz
   4. Multiplying Polynomials and Simplifying Expressions
      1. Instruction
         1. Does the order of operations apply to algebraic expressions?
      2. Assignment
         1. Practice multiplying polynomials.
      3. Quiz
   5. Factoring Polynomials: GCF
      1. Instruction
         1. What does it mean to be a factor of a polynomial?
      2. Assignment
         1. Practice factoring polynomials using the GCF.
      3. Quiz
   6. Factoring Polynomials: Double Grouping
      1. Instruction
         1. When can a polynomial with four terms be written as a product of binomials?
      2. Assignment
         1. Practice factoring polynomials by double grouping.
      3. Quiz
   7. Factoring Trinomials: a = 1
      1. Instruction
      2. Assignment
         1. Practice factoring trinomials with a leading coefficient of 1 and a positive constant term.
      3. Quiz
   8. Factoring Trinomials: a = 1 (Continued)
      1. Instruction
         1. How does the structure of a trinomial with a leading coefficient of 1 and a negative constant help to factor it?
      2. Assignment
         1. Practice factoring trinomials with a leading coefficient of 1 and a negative constant term.
      3. Quiz
   9. Factoring Trinomials: a > 1
      1. Instruction
         1. How does the structure of a trinomial with a leading coefficient greater than 1 help to factor it?
      2. Assignment
         1. Practice factoring trinomials with a leading coefficient greater than 1.
      3. Quiz
   10. Factoring Polynomials: Difference of Squares
       1. Instruction
          1. What is a difference of squares, and how does it factor?
       2. Assignment
          1. Practice factoring a difference of squares.
       3. Quiz
   11. Factoring Polynomials: Sum and Difference of Cubes
       1. Instruction
          1. What are the sum and difference of cubes, and how do they factor?
       2. Assignment
          1. Practice factoring the sum or difference of cubes.
       3. Quiz
   12. **Unit Test - (Must be taken in Person)**
       1. Unit Test Review
3. Quadratic Functions
   1. Introduction to Quadratic Functions
      1. Instruction
         1. What is a quadratic function?
      2. Assignment
         1. Practice identifying and evaluating quadratic functions.
      3. Quiz
   2. Quadratic Functions: Standard Form
      1. Instruction
         1. What do the coefficients of a quadratic function in standard form reveal about its graph?
      2. Assignment
         1. Practice with quadratic functions in standard form.
      3. Quiz
   3. Quadratic Functions: Factored Form
      1. Instruction
         1. What does the factored form of a quadratic function tell you about the function’s graph?
      2. Assignment
         1. Practice determining key aspects of quadratic functions given in factored form.
      3. Quiz
   4. Quadratic Functions: Vertex Form
      1. Instruction
         1. What does the vertex form of a quadratic function reveal about its relationship to y = x2?
      2. Assignment
         1. Practice with quadratic functions in vertex form.
      3. Quiz
   5. Completing the Square
      1. Instruction
         1. Can a quadratic function in standard form, with a = 1, be written in vertex form?
      2. Assignment
         1. Practice completing perfect square trinomials.
      3. Quiz
   6. Completing the Square (Continued)
      1. Instruction
         1. Can a quadratic function in standard form, with a≠1, be written in vertex form?
      2. Assignment
         1. Practice writing a quadratic function with a ≠1 in vertex form.
      3. Quiz
   7. **Unit Test - (Must be taken in Person)**
      1. Unit Test Review
4. Quadratic Equations
   1. Solving Quadratic Equations: Zero Product Property
      1. Instruction
         1. How is the property of multiplying by zero used to solve a quadratic equation?
      2. Assignment
         1. Practice solving quadratic equations.
      3. Quiz
   2. Solving Quadratic Equations: Factoring
      1. Instruction
         1. Why is it necessary to set a quadratic equal to zero when solving by factoring?
      2. Assignment
         1. Practice writing and solving quadratic equations.
      3. Quiz
   3. Solving Quadratic Equations: Square Root Property
      1. Instruction
         1. When can the square root be used to solve a quadratic equation?
      2. Assignment
         1. Practice using the square root property to solve an equation.
      3. Quiz
   4. Solving Quadratic Equations: Completing the Square
      1. Instruction
         1. How is a perfect square trinomial used to solve a quadratic equation?
      2. Assignment
         1. Practice applying the process of completing the square.
      3. Quiz
   5. Solving Quadratic Equations: Completing the Square (Continued)
      1. Instruction
         1. How does the process of completing the square change when a ≠ 1 in the quadratic equation?
      2. Assignment
         1. Practice solving quadratic equations with a ≠ 1.
      3. Quiz
   6. Introduction to the Quadratic Formula
      1. Instruction
         1. What is the quadratic formula?
      2. Assignment
         1. Practice finding the solutions of quadratic equations.
      3. Quiz
   7. Solving Quadratic Equations: Quadratic Formula
      1. Instruction
         1. How is the quadratic formula used to solve a quadratic equation?
      2. Assignment
         1. Practice using the quadratic formula.
      3. Quiz
   8. **Unit Test - (Must be taken in Person)**
      1. Unit Test Review
5. Data Analysis
   1. Describing Data
      1. Instruction
      2. Assignment
         1. Practice identifying various methods of data collection and data displays.
      3. Quiz
   2. Two-Way Tables
      1. Instruction
         1. What is a two-way table?
      2. Assignment
         1. Practice creating and analyzing two-way tables.
      3. Quiz
   3. Relative Frequencies and Association
      1. Instruction
         1. How is data in a two-way table analyzed to determine if there is an association between the variables?
      2. Assignment
         1. Practice working with relative frequency tables.
      3. Quiz
   4. Measures of Center
      1. Instruction
         1. What can dot plots and histograms tell you about a data set?
      2. Assignment
         1. Practice analyzing dot plots, histograms, and measures of center.
      3. Quiz
   5. Box Plots
      1. Instruction
         1. What does a box plot tell you about a data set?
      2. Assignment
         1. Practice analyzing data to create and interpret box plots.
      3. Quiz
   6. Standard Deviation
      1. Instruction
         1. How is the spread of data measured?
      2. Assignment
         1. Practice analyzing data sets.
      3. Quiz
   7. Line of Best Fit
      1. Instruction
         1. How is technology used to create a linear model?
      2. Assignment
         1. Practice describing trends in data.
      3. Quiz
   8. Analyzing Residuals
      1. Instruction
         1. How do you know if a linear model is good?
      2. Assignment
         1. Practice computing and analyzing residuals.
      3. Quiz
   9. Strength of Correlation
      1. Instruction
         1. How can you tell the strength of a relationship between two variables?
      2. Assignment
         1. Practice analyzing correlations.
      3. Quiz
   10. Regression Models
       1. Instruction
          1. How do you determine an appropriate nonlinear model to use for a scenario?
       2. Assignment
          1. Practice modeling real-world scenarios using linear, quadratic, or exponential regressions.
       3. Quiz
   11. **Unit Test - (Must be taken in Person)**
       1. Unit Test Review
6. Cumulative Exam - (Must be taken in Person)
   1. Cumulative Exam Review