Curriculum Map
Algebra Two CP1 (331)
Saugus High School
Saugus Public Schools
2009-2010

Week 1

Performance Standards

The students will:

10.N.1 Identify and use the properties of operations on real numbers.
10.N.2 Simplify numerical expressions.

Unit/Topic/Lesson
UNIT ONE
Properties and Operations

1. Sets of Numbers
2. Properties of Real Numbers
3. Square Roots

Mission and Expectations

1. Critical Thinking Skills 2. Problem Solving Skills 3. Test Taking Skills

Objectives

1. To classify and order numbers
2. To identify and use properties of real numbers.
3. To estimate square roots.
4. To simplify, add, subtract, multiply, and divide square roots.

Essential Question

How do you estimate the value of a square root without the use of a calculator?

Teacher Resources

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1. Textbook Lessons and Exercises
2. Teacher-Made Worksheets
3. Teacher-Made Assessments

Media Resources

1. Teacher-Made PowerPoint Presentations
2. Bittinger Test Generator
3. Electronic Worksheets in TeacherShared Folder
4. Teacher-Made Web-Based Assessments

Evaluation/Activities

Homework: To be given daily on each introduced topic
Review: All weekly concepts.
Quiz: Assessments given as warranted by the curriculum.

Completion date:

Completed by:

Comments:

Week 2

Performance Standards

The students will:

10.N.1 Identify and use the properties of operations on real numbers.
10.N.2 Simplify numerical expressions.

Unit/Topic/Lesson
UNIT ONE
Properties and Operations

1. Simplifying Algebraic Functions
2. Properties of Exponents

Mission and Expectations

1. Critical Thinking Skills 2. Problem Solving Skills 3. Test Taking Skills

Objectives

1. To simplify and evaluate algebraic expressions.
2. To simplify expressions involving exponents.
3. To use scientific notation.

Essential Question

How do you use the laws of exponents to simplify an algebraic expression involving monomials?

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1. Textbook Lessons and Exercises
2. Teacher-Made Worksheets
3. Teacher-Made Assessments

Media Resources

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Evaluation/Activities

Homework: To be given daily on each introduced topic
Review: All weekly concepts.
Quiz: Assessments given as warranted by the curriculum.
Test: On the concept of Properties and Operations

Completion date:

Completed by:

Comments:

Week 3

Performance Standards

The students will:

10.P.1 Describe, compute, extend, analyze, generalize, and create patterns.
10.P.6 Solve equations and inequalities.

Unit/Topic/Lesson
UNIT TWO
Introduction to Functions

1. Relations and Functions
2. Function Notation

Mission and Expectations

1. Critical Thinking Skills 2. Problem Solving Skills 3. Test Taking Skills

Objectives

1. To identify the domain and range of relations and functions.
2. To determine whether a relation is a function.
3. To write functions using functional notation.
4. To evaluate and graph functions.

Essential Question

How do you determine whether a relation is a function, both algebraically and graphically?

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3. Teacher-Made Assessments

Media Resources

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4. Teacher-Made Web-Based Assessments

Evaluation/Activities

Homework: To be given daily on each introduced topic
Review: All weekly concepts.
Quiz: Assessments given as warranted by the curriculum.

Completion date:

Completed by:

Comments:

Week 4

Performance Standards

The students will:

10.P.1 Describe, compute, extend, analyze, generalize, and create patterns.
10.P.6 Solve equations and inequalities.

Unit/Topic/Lesson
UNIT TWO
Introduction to Functions

1. Exploring Transformations
2. Introduction to Parent Functions

Mission and Expectations

1. Critical Thinking Skills 2. Problem Solving Skills 3. Test Taking Skills

Objectives

1. To apply transformations to points and sets of points.
2. To interpret transformations of real-world data.
3. To identify parent functions from graphs and equations.
4. To use parent functions to model real-world data and make estimates for unknown values.

Essential Question

How do you determine which parent function is represented by a given transformed function in functional notation?

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Evaluation/Activities

Homework: To be given daily on each introduced topic
Review: All weekly concepts.
Quiz: Assessments given as warranted by the curriculum.
Test: On concepts involving Properties, Operations and Functions.

Completion date:

Completed by:

Comments:

Week 5

Performance Standards

The students will:

10.P.1 Describe, compute, extend, analyze, generalize, and create patterns.

10.P.6 Solve equations and inequalities.

Unit/Topic/Lesson
UNIT THREE
Linear Functions

1. Solving Linear Equations (one variable)
2. Solving Linear Inequalities (one variable)
3. Solving Proportions

Mission and Expectations

1. Critical Thinking Skills 2. Problem Solving Skills 3. Test Taking Skills

Objectives

1. To solve linear equations and inequalities.
2. To apply proportional relationships to rates, similarity, and scale.

Essential Question

What are the similarities and differences between solving a linear equation compared to a linear inequality?

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2. Teacher-Made Worksheets
3. Teacher-Made Assessments

Media Resources

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Evaluation/Activities

Homework: To be given daily on each introduced topic
Review: All weekly concepts.
Quiz: Assessments given as warranted by the curriculum.

Completion date:

Completed by:

Comments:

Week 6

Performance Standards

The students will:

10.P.1 Describe, compute, extend, analyze, generalize, and create patterns.

10.P.6 Solve equations and inequalities.

Unit/Topic/Lesson
UNIT THREE
Linear Functions

1. Graphing Linear Functions (two variables)
2. Writing Linear Functions (two variables)
3. Linear Inequalities (two variables)

Mission and Expectations

1. Critical Thinking Skills 2. Problem Solving Skills 3. Test Taking Skills

Objectives

1. To graph a linear function.
2. To use slope-intercept and point-slope forms to write a linear function.
3. To solve and graph linear inequalities in two variables

Essential Question

How do you decide which form of a linear equation should be used in any given problem?

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Media Resources

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Evaluation/Activities

Homework: To be given daily on each introduced topic
Review: All weekly concepts.
Quiz: Assessments given as warranted by the curriculum.

Completion date:

Completed by:

Comments:

Week 7

Performance Standards

The students will:

10.P.1 Describe, compute, extend, analyze, generalize, and create patterns.

10.P.6 Solve equations and inequalities.

Unit/Topic/Lesson
UNIT THREE
Linear Functions

1. Solving Absolute Value Equations (one variable)
2. Solving Absolute Value Inequalities (one variable)

Mission and Expectations

1. Critical Thinking Skills 2. Problem Solving Skills 3. Test Taking Skills

Objectives

1. To solve compound inequalities.
2. To write and solve absolute-value equations and inequalities.

Essential Question

What is the difference between a disjunction and a conjunction and how does it apply to absolute values?

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Evaluation/Activities

Homework: To be given daily on each introduced topic
Review: All weekly concepts.
Quiz: Assessments given as warranted by the curriculum.

Completion date:

Completed by:

Comments:

Week 8

Performance Standards

The students will:

10.P.1 Describe, compute, extend, analyze, generalize, and create patterns.

10.P.6 Solve equations and inequalities.

Unit/Topic/Lesson
UNIT THREE
Linear Functions

1. Absolute Value Functions (two variables)
2. Review all Linear Functions concepts.

Mission and Expectations

1. Critical Thinking Skills 2. Problem Solving Skills 3. Test Taking Skills

Objectives

1. To solve absolute value functions with two variables
2. To review all linear functions, equations, and inequality concepts.

Essential Question

What is the domain and range of a given absolute value function and how do you determine these values?

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Evaluation/Activities

Homework: To be given daily on each introduced topic
Review: All weekly concepts.
Quiz: Assessments given as warranted by the curriculum.
Test: On the concept of Linear Functions

Completion date:

Completed by:

Comments:

Week 9

Performance Standards

The students will:
12.P.9 Use matrices to solve systems of linear equations. Apply to everyday problems

Unit/Topic/Lesson
UNIT FOUR
Matrices

1. Representations of Data and Data Handling.
2. Operations with Matrices.
3. Solving Problems Using Matrices
4. Matrices Using Graphing Calculators

Mission and Expectations

1. Critical Thinking Skills 2. Problem Solving Skills 3. Test Taking Skills

Objectives

1. To find the sum, differences, scalar product, and product of matrices.
2. To solve problems involving matrices.
3. To use the graphing calculator to perform operations with matrices.

Essential Question

How do you determine whether two matrices can be added, subtracted, or multiplied?

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Evaluation/Activities

Homework: To be given daily on each introduced topic
Review: All weekly concepts.
Quiz: Assessments given as warranted by the curriculum.
Test: On the concept of Matrices

Completion date:

Completed by:

Comments:

Week 10

Performance Standards

The students will:
10.P.8 Solve problems using systems of linear Equations or inequalities

12.P.10 Use symbolic, numeric, and graphical methods to solve systems of equations and/or inequalities.

Unit/Topic/Lesson
UNIT FIVE
Systems of Linear Equations and Inequalities

1. Solving a System of Linear Equations by Graphing (on paper)
2. Solving a System of Linear Equation by Graphing (using a graphing calculator)

Mission and Expectations

1. Critical Thinking Skills 2. Problem Solving Skills 3. Test Taking Skills

Objectives

1. To find the solution to a linear system by graphing on paper.
2. To find the solution to a linear system by graphing using a graphing calculator.

Essential Question

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Media Resources

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4. Teacher-Made Web-Based Assessments

Evaluation/Activities

Homework: To be given daily on each introduced topic
Review: All weekly concepts.
Quiz: Assessments given as warranted by the curriculum.

Completion date:

Completed by:

Comments:

Week 11

Performance Standards

The students will:
10.P.8 Solve problems using systems of linear Equations or inequalities

12.P.10 Use symbolic, numeric, and graphical methods to solve systems of equations and/or inequalities.

Unit/Topic/Lesson
UNIT FIVE
Systems of Linear Equations and Inequalities

1. Solving a System of Linear Equations by Symbolically Using Substitution
2. Solving a System of Linear Equation by Symbolically Using the Elimination Method

Mission and Expectations
1. Critical Thinking Skills 2. Problem Solving Skills 3. Test Taking Skills

Objectives
1. To solve a system of linear equations by the algebraic method of substation.
2. To solve a system of linear equations by the algebraic method of elimination (linear combination)

Essential Question

How do you determine whether to use elimination or substitution to sole a linear system?

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Evaluation/Activities

Homework: To be given daily on each introduced topic
Review: All weekly concepts.
Quiz: Assessments given as warranted by the curriculum.

Completion date:

Completed by:

Comments:

Week 12

Performance Standards

The students will:

10.P.8 Solve problems using systems of linear Equations or inequalities
12.P.10 Use symbolic, numeric, and graphical methods to solve systems of equations and/or inequalities.
12.P.9 Use matrices to solve systems of linear equations. Apply to everyday problems

Unit/Topic/Lesson
UNIT FIVE
Systems of Linear Equations and Inequalities

1. Solving a System of Linear Equations by Using Matrices
2. Solving a System of Linear Equations by Using the Appropriate Method

Mission and Expectations
1. Critical Thinking Skills 2. Problem Solving Skills 3. Test Taking Skills

Objectives

1. To solve a system of linear equations using matrices concepts.
2. To select the appropriate method to solve a linear system.

Essential Question

How do you decide which is the appropriate method of solution to a given system of linear equations?

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Evaluation/Activities

Homework: To be given daily on each introduced topic
Review: All weekly concepts.
Quiz: Assessments given as warranted by the curriculum.

Completion date:

Completed by:

Comments:

Week 13

Performance Standards

The students will:
10.P.8 Solve problems using systems of linear Equations or inequalities

12.P.10 Use symbolic, numeric, and graphical methods to solve systems of equations and/or inequalities.

Unit/Topic/Lesson
UNIT FIVE
Systems of Linear Equations and Inequalities

1. Solving a System of Linear Equations with Three Variables
2. Solving a System of Linear Inequalities

Mission and Expectations
1. Critical Thinking Skills 2. Problem Solving Skills 3. Test Taking Skills

Objectives
1. To solve a system of linear equations that contains three variables.
2. To solve a system of linear inequalities by graphing.

Essential Question

How do determine the solution to a linear inequality by graphing?

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Media Resources

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Evaluation/Activities

Homework: To be given daily on each introduced topic
Review: All weekly concepts.
Quiz: Assessments given as warranted by the curriculum.

Completion date:

Completed by:

Comments:

Week 14

Performance Standards

The students will:
10.P.8 Solve problems using systems of linear Equations or inequalities

12.P.10 Use symbolic, numeric, and graphical methods to solve systems of equations and/or inequalities.

Unit/Topic/Lesson
UNIT FIVE
Systems of Linear Equations and Inequalities

1. Linear Programming
2. Solving Linear Programming Problems

Mission and Expectations
1. Critical Thinking Skills 2. Problem Solving Skills 3. Test Taking Skills

Objectives
1. To solve linear programming problems.
2. To find the feasible region of solution to a problem.

Essential Question

How do you determine the feasible region of solution to a given problem and how do you optimize the objective function?

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2. Teacher-Made Worksheets
3. Teacher-Made Assessments

Media Resources

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4. Teacher-Made Web-Based Assessments

Evaluation/Activities

Homework: To be given daily on each introduced topic
Review: All weekly concepts.
Quiz: Assessments given as warranted by the curriculum.
Test: On the concepts of Solving Linear Systems

Completion date:

Completed by:

Comments:

Week 15

Performance Standards

The students will:
10.N.1 Identify and use the properties of operations on real numbers.

Unit/Topic/Lesson
UNIT SIX
Factoring

1. Factoring by Using Common Factors
2. Factoring Special Polynomials
3. Factoring Quadratic Trinomials (where *a* equals zero)

Mission and Expectations

1. Critical Thinking Skills 2. Problem Solving Skills 3. Test Taking Skills

Objectives

1. To factor an expression by factoring a common factor from each term.
2. To factor quadratic trinomials with a quadratic coefficient of one.

Essential Question

How are the concepts of factoring a quadratic trinomials and FOIL Method related to each other mathematically?

Teacher Resources

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1. Textbook Lessons and Exercises
2. Teacher-Made Worksheets
3. Teacher-Made Assessments

Media Resources

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4. Teacher-Made Web-Based Assessments

Evaluation/Activities

Homework: To be given daily on each introduced topic
Review: All weekly concepts.
Quiz: Assessments given as warranted by the curriculum.

Completion date:

Completed by:

Comments:

Week 16

Performance Standards

The students will:
10.N.1 Identify and use the properties of operations on real numbers.

Unit/Topic/Lesson
UNIT SIX
Factoring

1. More Factoring of Quadratic Trinomials (where *a* does not equal zero)
2. Factoring the Difference of Two Squares
3. Factoring Expressions Completely (using combined concepts)

Mission and Expectations

1. Critical Thinking Skills 2. Problem Solving Skills 3. Test Taking Skills

Objectives

1. To factor a quadratic trinomial with a quadratic coefficient not equal to one.
2. To factor the difference of two squares.

Essential Question

How do you use the concept of factoring by grouping to factor a quadratic trinomial?

Teacher Resources

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Evaluation/Activities

Homework: To be given daily on each introduced topic
Review: All weekly concepts.
Quiz: Assessments given as warranted by the curriculum.
Test: On the concepts of Factoring.

Completion date:

Completed by:

Comments:

Week 17

Performance Standards

The students will:
10.P.5 Find solutions to quadratic equations.
12.P.7 Find solutions to quadratic equations.
12.P.8 Solve a variety of equations and inequalities.
12.P.12 Identify maximum and minimum values of a function.

Unit/Topic/Lesson
UNIT SEVEN
Quadratic Functions

1. Introduction to Quadratic Functions and Equations
2. Transformation of Quadratic Functions
3. Vertex Form of a Quadratic Function
4. Standard Form of a Quadratic Function
5. Properties of Quadratic Functions

Mission and Expectations
1. Critical Thinking Skills 2. Problem Solving Skills 3. Test Taking Skills

Objectives
1. To transform quadratic functions.
2. To write quadratic function in various forms.
3. To identify properties of given quadratic functions.

Essential Question
How do you determine the minimum and maximum value of a quadratic function from the equation?

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Evaluation/Activities
Homework: To be given daily on each introduced topic
Review: All weekly concepts.
Quiz: Assessments given as warranted by the curriculum.

Completion date:

Completed by:

Comments:

Week 18

Performance Standards

The students will:
10.P.5 Find solutions to quadratic equations.
12.P.7 Find solutions to quadratic equations.
12.P.8 Solve a variety of equations and inequalities.

Unit/Topic/Lesson
UNIT SEVEN
Quadratic Functions

1. Solving a Quadratic Equation by Factoring
2. Solving a Quadratic Equation by Graphing on Paper
3. Solving a Quadratic Equation by Graphing with the Graphing Calculator

Mission and Expectations
1. Critical Thinking Skills 2. Problem Solving Skills 3. Test Taking Skills

Objectives
1. To solve a quadratic equation by factoring and the zero-product property.
2. To solve a quadratic equation by graphing and determining the zeros.
3. To use a graphing calculator to find the roots of a quadratic equation.

Essential Question
How does the concept of the zero-product property allow you to find the roots of a quadratic function?

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Evaluation/Activities
Homework: To be given daily on each introduced topic
Review: All weekly concepts.
Quiz: Assessments given as warranted by the curriculum.

Completion date:

Completed by:

Comments:

Week 19

Performance Standards

The students will:
10.P.5 Find solutions to quadratic equations.
12.P.7 Find solutions to quadratic equations.
12.P.8 Solve a variety of equations and inequalities.

Unit/Topic/Lesson
UNIT SEVEN
Quadratic Functions

1. Concept of Completing the Square
2. Solving a Quadratic Equation by Completing the Square

Mission and Expectations
1. Critical Thinking Skills 2. Problem Solving Skills 3. Test Taking Skills

Objectives
1. To complete the procedure of completing the square.
2. To use the concept of completing the square to solve a quadratic equation.

Essential Question
How do you use the concept of completing the square to both put a quadratic equation in standard form and find the roots of that quadratic function?

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Evaluation/Activities
Homework: To be given daily on each introduced topic
Review: All weekly concepts.
Quiz: Assessments given as warranted by the curriculum.

Completion date:

Completed by:

Comments:

Week 20

Performance Standards

The students will:
10.P.5 Demonstrate an understanding of the relationship between various representations of a line.
10.P.6 Find linear equations that represent lines parallel or perpendicular to given lines.
12.N.1 Define complex numbers and operations on them.

Unit/Topic/Lesson
UNIT SEVEN
Quadratic Functions

1. Real Numbers and Types of Numbers
2. Classifications of Numbers
3. Rational and Irrational Numbers
4. Imaginary Numbers
5. Powers of *i*

Mission and Expectations
1. Critical Thinking Skills 2. Problem Solving Skills 3. Test Taking Skills

Objectives
1. To classify different types of numbers.
2. To determine whether a number is rational or irrational.
3. To work with imaginary numbers

Essential Question
How are the powers of *i* derived and how are they cyclic?

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Evaluation/Activities
Homework: To be given daily on each introduced topic
Review: All weekly concepts.
Quiz: Assessments given as warranted by the curriculum.

Completion date:

Completed by:

Comments:

Week 21

Performance Standards

The students will:
10.P.5 Find solutions to quadratic equations.
12.P.7 Find solutions to quadratic equations.
12.P.8 Solve a variety of equations and inequalities.

Unit/Topic/Lesson
UNIT SEVEN
Quadratic Functions

1. Solving a Quadratic Equation by Using the Quadratic Formula
2. Classifying Solutions Using the Discriminant

Mission and Expectations
1. Critical Thinking Skills 2. Problem Solving Skills 3. Test Taking Skills

Objectives

1. To use the Quadratic Formula to solve a quadratic equation.
2. To use the Discriminant to determine the number and nature of the roots.

Essential Question

How do you use the concept of completing the square to both put a quadratic equation in standard form and find the roots of that quadratic function?

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Evaluation/Activities

Homework: To be given daily on each introduced topic
Review: All weekly concepts.
Quiz: Assessments given as warranted by the curriculum.
Test: On the concepts of Quadratic Functions

Completion date:

Completed by:

Comments:

Week 22

Performance Standards

The students will:
12.P.6 Recognize functions as polynomial, rational, logarithmic, or exponential.
12.P.3 Demonstrate an understanding of the binomial theorem
12.P.11 Solve everyday problems that can be modeled using polynomial, rational, exponential, logarithmic, step functions, absolute value and square roots.

Unit/Topic/Lesson
UNIT EIGHT
Operations with Polynomials

1. Classification of Polynomials
2. Addition and Subtraction of Polynomials
3. Multiplication of Polynomials

Mission and Expectations
1. Critical Thinking Skills 2. Problem Solving Skills 3. Test Taking Skills

Objectives

1. To identify, evaluate, add, and subtract polynomials.
2. To multiply polynomials.
3. To use binomial expansion to expand binomial expressions that are raised to various positive integer powers.

Essential Question

How is multiplying any two polynomials just an expansion of the distributive property?

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Evaluation/Activities

Homework: To be given daily on each introduced topic
Review: All weekly concepts.
Quiz: Assessments given as warranted by the curriculum.

Completion date:

Completed by:

Comments:

Week 23

Performance Standards

The students will:
12.P.6 Recognize functions as polynomial, rational, logarithmic, or exponential.
12.P.3 Demonstrate an understanding of the binomial theorem
12.P.11 Solve everyday problems that can be modeled using polynomial, rational, exponential, logarithmic, step functions, absolute value and square roots.

Unit/Topic/Lesson
UNIT EIGHT
Operations with Polynomials

1. Long Division of Polynomials
2. Synthetic Division of Polynomials
3. Factoring Polynomials

Objectives

1. To use long division and synthetic division to divide polynomials.
2. To determine factors of a polynomial.
3. To factor a polynomial by grouping.
4. To factor the sum or difference of two cubes.

Essential Question

Why is it important to supply a zero for a coefficient of any missing term, when you are divide polynomials?

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Evaluation/Activities

Homework: To be given daily on each introduced topic
Review: All weekly concepts.
Quiz: Assessments given as warranted by the curriculum.
Test: On the concepts of Polynomials.

Completion date:

Completed by:

Comments:

Week 24

Performance Standards

The students will:
12.P.4 Demonstrate an understanding of exponential and logarithmic functions.
12.P.5 Perform operations on functions, including composition. Find the inverses of functions.
12.P.6 Recognize functions as polynomial, rational, logarithmic, or exponential.
12.P.11 Solve everyday problems that can be modeled using polynomial, rational, exponential, logarithmic, step functions, absolute value and square roots.

Unit/Topic/Lesson
UNIT NINE
Exponential and Logarithmic Functions

1. Exponential Functions
2. Exponential Growth and Decay
3. Inverse of Relations and Functions

Objectives

1. To write and evaluate exponential expressions to model growth or decay situations.
2. To graph and recognize inverses of both relations and functions.
3. To find inverse of functions.

Essential Question

How do you use the concept of exponential growth to work with the principle of compound interest?

Teacher Resources

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1. Textbook Lessons and Exercises
2. Teacher-Made Worksheets
3. Teacher-Made Assessments

Media Resources

1. Teacher-Made PowerPoint Presentations
2. Bittinger Test Generator
3. Electronic Worksheets in TeacherShared Folder
4. Teacher-Made Web-Based Assessments

Evaluation/Activities

Homework: To be given daily on each introduced topic
Review: All weekly concepts.
Quiz: Assessments given as warranted by the curriculum.

Completion date:

Completed by:

Comments:

Week 25

Performance Standards

The students will:
12.P.4 Demonstrate an understanding of exponential and logarithmic functions.
12.P.6 Recognize functions as polynomial, rational, logarithmic, or exponential.
12.P.11 Solve everyday problems that can be modeled using polynomial, rational, exponential, logarithmic, step functions, absolute value and square roots.

Unit/Topic/Lesson
UNIT NINE
Exponential and Logarithmic Functions

1. Logarithmic Functions
2. Properties of Logarithms

Objectives

1. To write equivalent forms for exponential and logarithmic functions.
2. To write, graph, and evaluate logarithmic functions.
3. To use the properties of logarithms to simplify logarithmic expressions.
4. To translate between logarithms in any base.

Essential Question

How do you convert between exponential and logarithmic form?

Teacher Resources

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1. Textbook Lessons and Exercises
2. Teacher-Made Worksheets
3. Teacher-Made Assessments

Media Resources

1. Teacher-Made PowerPoint Presentations
2. Bittinger Test Generator
3. Electronic Worksheets in TeacherShared Folder
4. Teacher-Made Web-Based Assessments

Evaluation/Activities

Homework: To be given daily on each introduced topic
Review: All weekly concepts.
Quiz: Assessments given as warranted by the curriculum.
Test: On the concepts of Exponential and Logarithmic Functions

Completion date:

Completed by:

Comments:

Week 26

Performance Standards

The students will:
12.P.6 Recognize functions as polynomial, rational, logarithmic, or exponential.

Unit/Topic/Lesson
UNIT TEN
Rational Functions

1. Simplifying Rational Expressions
2. Multiplication of Rational Expressions
3. Division of Rational Expressions

Objectives

1. To simplify rational expressions.
2. To multiply and divide rational expressions.

Essential Question

Why is it important to state the restricted values before simplifying a rational expression?

Teacher Resources

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1. Textbook Lessons and Exercises
2. Teacher-Made Worksheets
3. Teacher-Made Assessments

Media Resources

1. Teacher-Made PowerPoint Presentations
2. Bittinger Test Generator
3. Electronic Worksheets in TeacherShared Folder
4. Teacher-Made Web-Based Assessments

Evaluation/Activities

Homework: To be given daily on each introduced topic
Review: All weekly concepts.
Quiz: Assessments given as warranted by the curriculum.

Completion date:

Completed by:

Comments:

Week 27

Performance Standards

The students will:
12.P.6 Recognize functions as polynomial, rational, logarithmic, or exponential.
12.P.11 Solve everyday problems that can be modeled using polynomial, rational, exponential, logarithmic, step functions, absolute value and square roots.

Unit/Topic/Lesson
UNIT TEN
Rational Functions

1. Addition of Rational Expressions
2. Subtraction of Rational Expressions

Objectives
1. To add rational expressions.
2. To subtract rational expressions.

Essential Question

How do you know when a rational expression can be simplified?

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1. Textbook Lessons and Exercises
2. Teacher-Made Worksheets
3. Teacher-Made Assessments

Media Resources

1. Teacher-Made PowerPoint Presentations
2. Bittinger Test Generator
3. Electronic Worksheets in TeacherShared Folder
4. Teacher-Made Web-Based Assessments

Evaluation/Activities

Homework: To be given daily on each introduced topic
Review: All weekly concepts.
Quiz: Assessments given as warranted by the curriculum.
Test: On the concepts of Rational Functions.

Completion date:

Completed by:

Comments:

Week 28

Performance Standards

The students will:
12.P.6 Recognize functions as polynomial, rational, logarithmic, or exponential.
12.N.2 Simplify numerical expressions with powers and roots, including fractional and negative exponents.

Unit/Topic/Lesson
UNIT ELEVEN
Radical Functions

1. Simplification of Radical Expressions
2. Properties of Radical Exponents

Objectives
1. To rewrite radical expressions by using rational exponents.
2. To simplifying and evaluate radical expressions and expressions with rational exponents.

Essential Question

How do the concepts of *n*th roots relate with rational exponents?

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1. Textbook Lessons and Exercises
2. Teacher-Made Worksheets
3. Teacher-Made Assessments

Media Resources

1. Teacher-Made PowerPoint Presentations
2. Bittinger Test Generator
3. Electronic Worksheets in TeacherShared Folder
4. Teacher-Made Web-Based Assessments

Evaluation/Activities

Homework: To be given daily on each introduced topic
Review: All weekly concepts.
Quiz: Assessments given as warranted by the curriculum.

Completion date:

Completed by:

Comments:

Week 29

Performance Standards

The students will:
12.P.6 Recognize functions as polynomial, rational, logarithmic, or exponential.
12.N.2 Simplify numerical expressions with powers and roots, including fractional and negative exponents.

Unit/Topic/Lesson
UNIT ELEVEN
Radical Functions

1. Radical Functions
2. Solving Radical Equations

Objectives

1. To graph radical functions.
2. To solve radical equations.

Essential Question

Why is it necessary to check the possible solutions for extraneous roots when solving a radical equation?

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1. Textbook Lessons and Exercises
2. Teacher-Made Worksheets
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Media Resources

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2. Bittinger Test Generator
3. Electronic Worksheets in TeacherShared Folder
4. Teacher-Made Web-Based Assessments

Evaluation/Activities

Homework: To be given daily on each introduced topic
Review: All weekly concepts.
Quiz: Assessments given as warranted by the curriculum.
Test: On the concepts of Radical Functions.

Completion date:

Completed by:

Comments:

Week 30

Performance Standards

The students will:
12.G.4 Relate geometric and algebraic representations of line, curves, and conic sections.

Unit/Topic/Lesson
UNIT THIRTEEN
Conic Sections

1. Introduction to Conic Sections
2. Parabolas
3. Circles

Objectives

1. To recognize conic sections as intersections of planes and cones.
2. To write the equation of parabola and identify its focus, directrix, and the axis of symmetry.
3. To write the equation of a circle and identify its center and radius.

Essential Question

How can a circle be defined in terms of distances?

Teacher Resources

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Media Resources

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2. Bittinger Test Generator
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4. Teacher-Made Web-Based Assessments

Evaluation/Activities

Homework: To be given daily on each introduced topic
Review: All weekly concepts.
Quiz: Assessments given as warranted by the curriculum.

Completion date:

Completed by:

Comments:

Week 31

Performance Standards

The students will:
12.G.4 Relate geometric and algebraic representations of line, curves, and conic sections.

Unit/Topic/Lesson
UNIT THIRTEEN
Conic Sections

1. Ellipses
2. Hyperbolas

Objectives

1. To write the equation of an ellipse and identify its center, vertices, co-vertices, and foci.
2. To write the equation of a hyperbola and identify its vertices, co-vertices, center, foci, and asymptotes.

Objectives

How do foci of an ellipse relate to the concept of distance?

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1. Textbook Lessons and Exercises
2. Teacher-Made Worksheets
3. Teacher-Made Assessments

Media Resources

1. Teacher-Made PowerPoint Presentations
2. Bittinger Test Generator
3. Electronic Worksheets in TeacherShared Folder
4. Teacher-Made Web-Based Assessments

Evaluation/Activities

Homework: To be given daily on each introduced topic
Review: All weekly concepts.
Quiz: Assessments given as warranted by the curriculum.

Completion date:

Completed by:

Comments:

Week 32

Performance Standards

The students will:
12.G.4 Relate geometric and algebraic representations of line, curves, and conic sections.

Unit/Topic/Lesson
UNIT THIRTEEN
Conic Sections

1. Identification of Conic Sections
2. Review of Conic Sections

Objectives

1. To identify and transform conic sections.
2. To use completing the square to identify and graph conic sections.

Essential Question

How do you determine which conic section is being described by looking at the equation?

Teacher Resources

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1. Textbook Lessons and Exercises
2. Teacher-Made Worksheets
3. Teacher-Made Assessments

Media Resources

1. Teacher-Made PowerPoint Presentations
2. Bittinger Test Generator
3. Electronic Worksheets in TeacherShared Folder
4. Teacher-Made Web-Based Assessments

Evaluation/Activities

Homework: To be given daily on each introduced topic
Review: All weekly concepts.
Quiz: Assessments given as warranted by the curriculum.
Test: On the concepts involving Conic Sections.

Completion date:

Completed by:

Comments:

Week 33

Performance Standards

The students will:

12.P.1 Describe, complete, extend, analyze, generalize, and create a wide variety of patterns, including iterative and recursive patterns such as Pascal's Triangle.

12.P.2 Identify arithmetic and geometric sequences and finite arithmetic and geometric series. Use the properties of such sequences and series to solve problems, including finding the general term and sum recursively and explicitly.

Unit/Topic/Lesson
UNIT FOURTEEN
Sequences and Series

1. Algebraic Sequences
2. Algebraic Series

Objectives

1. To find the indicated terms of an arithmetic sequence.
2. To find the sums of an arithmetic series.

Objectives

How do you find the nth term of an arithmetic sequence without finding all of the terms prior to that term?

Teacher Resources

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1. Textbook Lessons and Exercises
2. Teacher-Made Worksheets
3. Teacher-Made Assessments

Media Resources

1. Teacher-Made PowerPoint Presentations
2. Bittinger Test Generator
3. Electronic Worksheets in TeacherShared Folder
4. Teacher-Made Web-Based Assessments

Evaluation/Activities

Homework: To be given daily on each introduced topic
Review: All weekly concepts.
Quiz: Assessments given as warranted by the curriculum.

Completion date:

Completed by:

Comments:

Week 34

Performance Standards

The students will:

12.P.1 Describe, complete, extend, analyze, generalize, and create a wide variety of patterns, including iterative and recursive patterns such as Pascal's Triangle.

12.P.2 Identify arithmetic and geometric sequences and finite arithmetic and geometric series. Use the properties of such sequences and series to solve problems, including finding the general term and sum recursively and explicitly.

Unit/Topic/Lesson
UNIT THIRTEEN
Sequences and Series

1. Geometric Sequences
2. Geometric Series

Objectives

1. To find the indicated terms of an geometric sequence.
2. To find the sums of a geometric series

Essential Question

When can you find the sum of an infinite series?

Teacher Resources

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1. Textbook Lessons and Exercises
2. Teacher-Made Worksheets
3. Teacher-Made Assessments

Media Resources

1. Teacher-Made PowerPoint Presentations
2. Bittinger Test Generator
3. Electronic Worksheets in TeacherShared Folder
4. Teacher-Made Web-Based Assessments

Evaluation/Activities

Homework: To be given daily on each introduced topic
Review: All weekly concepts.
Quiz: Assessments given as warranted by the curriculum.
Test: On the concepts of Sequences and Series.

Completion date:

Completed by:

Comments:

Week 35

Performance Standards

The students will:
12.P.4 Demonstrate an understanding of trigonometric, exponential and logarithmic functions.
12.G.1 Define the sine, cosine, and tangent of an acute angle. Apply to the solution of problems.
12.P.6 Given algebraic, numeric and/or graphical representations, recognize functions as polynomial, rational, logarithmic, exponential, or trigonometric.

Unit/Topic/Lesson
UNIT FOURTEEN
Trigonometric Functions

1. Right Angle Trigonometry
2. Angles of Rotation

Mission and Expectations

1. Critical Thinking Skills 2. Problem Solving Skills 3. Test Taking Skills

Objectives

1. To understand and use trigonometric relationships of acute angles in triangles.
2. To determine side lengths of right triangles by using trigonometric functions.
3. To draw angles in standard position.
4. To determine values of the trigonometric functions for an angle in standard position.

Essential Question

How do you use right trigonometric ratios to find missing sides of right triangles?

Teacher Resources

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1. Textbook Lessons and Exercises
2. Teacher-Made Worksheets
3. Teacher-Made Assessments

Media Resources

1. Teacher-Made PowerPoint Presentations
2. Bittinger Test Generator
3. Electronic Worksheets in TeacherShared Folder
4. Teacher-Made Web-Based Assessments

Evaluation/Activities

Homework: To be given daily on each introduced topic
Review: All weekly concepts.
Quiz: Assessments given as warranted by the curriculum.

Completion date:

Completed by:

Comments:

Week 36

Performance Standards

The students will:
12.P.4 Demonstrate an understanding of trigonometric, exponential and logarithmic functions.
12.G.1 Define the sine, cosine, and tangent of an acute angle. Apply to the solution of problems.
12.P.6 Given algebraic, numeric and/or graphical representations, recognize functions as polynomial, rational, logarithmic, exponential, or trigonometric.

Unit/Topic/Lesson
UNIT FOURTEEN
Trigonometric Functions

1. The Unit Circle
2. Inverse Trigonometric Functions

Mission and Expectations

1. Critical Thinking Skills 2. Problem Solving Skills 3. Test Taking Skills

Objectives

1. To convert angle measures between degrees and radians.
2. To find the values of trigonometric functions on the unit circle.
3. To evaluate inverse trigonometric functions.
4. To use trigonometric functions and inverse trigonometric functions to solve problems.

Essential Question

How do you convert angle measure between degrees and radians and why would this conversion be necessary?

Teacher Resources

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1. Textbook Lessons and Exercises
2. Teacher-Made Worksheets
3. Teacher-Made Assessments

Media Resources

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2. Bittinger Test Generator
3. Electronic Worksheets in TeacherShared Folder
4. Teacher-Made Web-Based Assessments

Evaluation/Activities

Homework: To be given daily on each introduced topic
Review: All weekly concepts.
Quiz: Assessments given as warranted by the curriculum.
Test: On the concepts of Trigonometric Functions.

Completion date:

Completed by:

Comments: