

Algebra II is specifically aligned with Texas Essential Knowledge and Skills (TEKS) Algebra II Standards and Benchmarks. The Algebra II curriculum builds on the concepts covered in Algebra I. Through a "Discovery-Confirmation-Practice"-based exploration of intermediate algebra, students are challenged to work toward a mastery of computational skills, to deepen their understanding of key ideas and solution strategies, and to extend their knowledge through a variety of problem-solving applications.

Course topics include conic sections; functions, relations, and their graphs; quadratic functions; parent functions, domain and range, inverse functions, and function transformations; and advanced polynomial functions. Students also cover topics relating to rational, radical, exponential, and logarithmic functions and transformations; sequences and series; and data analysis and probability.

Algebra II features ample opportunity for students to hone their computational skills by working through practice problem sets before moving on to formal assessment.

To assist students for whom language presents a barrier to learning or who are not reading at grade level, Algebra II includes audio resources in both Spanish and English.

The content is based on the National Council of Teachers of Mathematics (NCTM) standards and is specifically aligned with TEKS Algebra II Standards and Benchmarks.

Length: Two Semesters

UNIT 1: CONIC SECTIONS

LESSON 1: WHAT IS A CONIC SECTION?

Study: What is a Conic Section?

Learn the definitions of right circular cone, nappe, vertex, conic section, and cross section. Learn about four kinds of conic sections.

Duration: 0 hr 50 min

Quiz: What is a Conic Section?

Take a quiz to assess your understanding of the material.

Duration: 0 hr 25 min

Scoring: 18 points

LESSON 2: GEOMETRY OF CONIC SECTIONS

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Study: Geometry of Conic Sections

Learn about parts and geometric properties of circles; ellipses (focus, major and minor axes); hyperbolas (foci, vertex, transverse axis, asymptotes); and parabolas (directrix, vertex).

Duration: 0 hr 50 min

Checkup: Practice Problems

Complete a set of practice problems to hone your calculation skills.

Duration: 0 hr 30 min

Quiz: Geometry of Circles and Ellipses

Take a quiz to assess your understanding of the material.

Duration: 0 hr 25 min

Scoring: 22 points

Quiz: Geometry of Hyperbolas and Parabolas

Take a quiz to assess your understanding of the material.

Duration: 0 hr

25 min Scoring: 24 points

LESSON 3: CIRCLES

Study: Circles

Learn about defining circles algebraically by using the distance formula and about finding equations of circles with various centers.

Duration: 0 hr 50 min

Checkup: Practice Problems

Complete a set of practice problems to hone your calculation skills.

Duration: 0 hr 30 min

Quiz: Circles Centered at the Origin

Take a quiz to assess your understanding of the material.

Duration: 0 hr 25 min

Scoring: 16 points

Quiz: Circles Not Centered at the Origin

Take a quiz to assess your understanding of the material.

Duration: 0 hr 25

min Scoring: 24 points

LESSON 4: ELLIPSES

Study: Ellipses

Find the equation for an ellipse, whether it is centered at the origin or elsewhere on the xy -plane. Explore

how the denominators in an ellipse's equation relate to the shape of its graph. Investigate circles as special cases of ellipses.

Duration: 0 hr 50 min

Checkup: Practice Problems

Complete a set of practice problems to hone your calculation skills.

Duration: 0 hr 30 min

Quiz: Ellipses Centered at the Origin

Take a quiz to assess your understanding of the material.

Duration: 0 hr 25 min

Scoring: 22 points

Quiz: Ellipses Not Centered at the Origin

Take a quiz to assess your understanding of the material.

Duration: 0 hr 25

min Scoring: 16 points

LESSON 5: HYPERBOLAS

Study: Hyperbolas

Learn about equations for up-down and left-right hyperbolas centered at the origin; asymptotes and their equations; graphing hyperbolas from equations; and equations and graphs of hyperbolas centered at points other than the origin.

Duration: 0 hr 50 min

Checkup: Practice Problems

Complete a set of practice problems to hone your calculation skills.

Duration: 0 hr 30 min

Quiz: Hyperbolas Centered at the Origin

Take a quiz to assess your understanding of the material.

Duration: 0 hr 25

min Scoring: 22 points

Quiz: Hyperbolas Not Centered at the Origin

Take a quiz to assess your understanding of the material.

Duration: 0 hr

25 min Scoring: 18 points

LESSON 6: PARABOLAS

Study: Parabolas

Learn about finding a parabola's equation from its graph; equations for a parabola with its vertex at the

origin that opens up/down or left/right; the effect of the coefficient of a squared variable on which way the parabola opens and on its shape; equations of parabolas with vertices at points other than the origin; vertex form and standard form of an equation for a parabola; and converting between vertex form and standard form.

Duration: 0 hr 50 min

Checkup: Practice Problems

Complete a set of practice problems to hone your calculation skills.

Duration: 0 hr 30 min

Quiz: Parabolas with Vertices at the Origin

Take a quiz to assess your understanding of the material.

Duration: 0 hr 25

min Scoring: 18 points

Quiz: Parabolas with Vertices Not at the Origin

Take a quiz to assess your understanding of the material.

Duration: 0

hr 25 min Scoring: 20 points

Quiz: Converting Parabolic Equations

Take a quiz to assess your understanding of the material.

Duration: 0 hr 25 min

Scoring: 16 points

LESSON 7: NONLINEAR SYSTEMS OF EQUATIONS

Study: Nonlinear Systems of Equations

Learn about solution sets for nonlinear systems of equations; solving nonlinear systems of equations using the substitution method; choosing which variable to isolate; substituting a squared variable; and determining the number of solutions. Explore a human-cannonball case study.

Duration: 0 hr 50 min

Checkup: Practice Problems

Complete a set of practice problems to hone your calculation skills.

Duration: 0 hr 30 min

Quiz: Nonlinear Systems of Equations

Take a quiz to assess your understanding of the material.

Duration: 0 hr 25 min

Scoring: 22 points

LESSON 8: NONLINEAR INEQUALITIES

Study: Nonlinear Inequalities

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Learn about solution sets for and graphs of nonlinear inequalities; boundaries of circles, ellipses, hyperbolas, and parabolas; three steps to graphing nonlinear inequalities; and nonlinear systems of inequalities.

Duration: 0 hr 50 min

Checkpoint: Practice Problems

Complete a set of practice problems to hone your calculation skills.

Duration: 0 hr 30 min

Quiz: Nonlinear Inequalities

Take a quiz to assess your understanding of the material.

Duration: 0 hr 25 min Scoring: 22

points

LESSON 9: WRAP-UP

Practice: Assignment

Submit your work for a set of 20 practice problems.

Duration: 1 hr Scoring: 100 points

Review: Review Exercise

Take part in interactive games to review unit material in preparation for upcoming assessments.

Duration: 1 hr

Discuss: Conic Sections in the Real World

Take part in a discussion about applying methods learned in this unit.

Duration: 0 hr 20 min Scoring: 30 points

Test (CS): Conic Sections

Take a computer-scored test to assess what you have learned in this unit.

Duration: 0 hr 40

min Scoring: 117 points

Test (TS): Conic Sections

Take a teacher-scored test to assess what you have learned in this unit.

Duration: 0 hr 30 min

Scoring: 50 points

LESSON 10: DIAGNOSTIC

Diagnostic: Conic Sections

Take a diagnostic unit test that will generate a study plan based on your responses.

Duration: 0 hr 40 min Scoring: 39 points

UNIT 2: FUNCTIONS RELATIONS & THEIR GRAPHS

LESSON 1: HOW MANY OUTPUTS?

Study: How Many Outputs?

Review functions and what makes them special, independent and dependent variables, inputs and outputs, and examples of relationships that might not be functional.

Duration: 0 hr 50 min

Quiz: How Many Outputs?

Take a quiz to assess your understanding of the material.

Duration: 0 hr 25 min Scoring: 22 points

LESSON 2: FUNCTIONS AND RELATIONS

Study: Functions and Relations

Learn about using mapping diagrams, ordered pairs on diagrams, the difference between mapping diagrams of functions and relations, the vertical line test, and equations of functions and relations.

Duration: 0 hr 50 min

Checkup: Practice Problems

Complete a set of practice problems to hone your calculation skills.

Duration: 0 hr 30 min

Quiz: Mapping Functions and Relations

Take a quiz to assess your understanding of the material.

Duration: 0 hr 25 min Scoring: 16 points

Quiz: Identifying Functions and Relations

Take a quiz to assess your understanding of the material.

Duration: 0 hr 25 min Scoring: 16 points

LESSON 3: DOMAIN AND RANGE

Study: Domain and Range

Learn about domains and range on a mapping diagram, estimating domain and range of functions, and calculating the domain of a function from an equation.

Duration: 0 hr 50 min

Checkup: Practice Problems

Complete a set of practice problems to hone your calculation skills.

Duration: 0 hr 30 min

Quiz: Domain and Range

Take a quiz to assess your understanding of the material.

Duration: 0 hr 25 min Scoring: 22

points

LESSON 4: COMPOSITION OF FUNCTIONS**Study: Composition of Functions**

Explore and evaluate the composition of functions by tracking what happens to the output of one function as it becomes the input of another. Write the names of compositions in function notation.

Duration: 0

hr 50 min

Checkup: Practice Problems

Complete a set of practice problems to hone your calculation skills.

Duration: 0 hr 30 min

Quiz: Composition of Functions

Take a quiz to assess your understanding of the material.

Duration: 0 hr 25 min

Scoring: 20 points

LESSON 5: SOLVING PROBLEMS WITH COMPOSITION**Study: Solving Problems with Composition**

Explore a case study of the submersion of a submarine to demonstrate composite functions.

Duration: 0 hr 50 min

Checkup: Practice Problems

Complete a set of practice problems to hone your calculation skills.

Duration: 0 hr 30 min

Quiz: Solving Problems with Composition

Take a quiz to assess your understanding of the material.

Duration: 0 hr 25
min Scoring: 16 points

LESSON 6: WRAP-UP

Practice: Assignment

Submit your work for a set of 20 practice problems.

Duration: 1 hr Scoring: 100 points

Review: Review Exercises

Take part in interactive games to review unit material in preparation for upcoming assessments.

Duration: 1 hr

Discuss: Real-World Input-Output Machines

Take part in a three- to five-question discussion about applying methods learned in this unit.

Duration: 0 hr 20 min Scoring: 30 points

Test (CS): Functions Relations & Their Graphs

Take a computer-scored test to assess what you have learned in this unit.

Duration: 0 hr 40 min Scoring: 66 points

Test (TS): Functions Relations & Their Graphs

Take a teacher-scored test to assess what you have learned in this unit.

Duration: 0 hr 30 min Scoring: 50 points

LESSON 7: DIAGNOSTIC

Diagnostic: Functions Relations & Their Graphs

Take a diagnostic unit test that will generate a study plan based on your responses.

Duration: 0 hr 40 min Scoring: 22 points

UNIT 3: QUADRATIC FUNCTIONS

LESSON 1: FACTORING X^2+BX+C

Study: Factoring x^2+bx+c

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Learn about factoring quadratic trinomials with leading coefficients of 1; rules for finding the constant term and coefficient of the x -term; using a table to factor trinomials; and diagramming signs while factoring trinomials.

Duration: 0 hr 50 min

Checkup: Practice Problems

Complete a set of practice problems to hone your calculation skills.

Duration: 0 hr 30 min

Quiz: Binomial Factors of Trinomials

Take a quiz to assess your understanding of the material.

Duration: 0 hr 25 min

Scoring: 30 points

Quiz: Factoring Trinomials

Take a quiz to assess your understanding of the material.

Duration: 0 hr 25 min Scoring: 30

points

LESSON 2: FACTORING AX^2+BX+C

Study: Factoring ax^2+bx+c

Learn about factoring trinomials with leading coefficients other than 1; factoring out a leading coefficient of -1; how values of factors relate to values of a trinomial; finding factor pairs of leading coefficients and constant terms; and finding signs in factors of trinomials with a leading coefficient different from 1.

Duration: 0 hr 50 min

Checkup: Practice Problems

Complete a set of practice problems to hone your calculation skills.

Duration: 0 hr 30 min

Quiz: Factoring Trinomials (Basic)

Take a quiz to assess your understanding of the material.

Duration: 0 hr 25 min

Scoring: 30 points

Quiz: Factoring Trinomials (Advanced)

Take a quiz to assess your understanding of the material.

Duration: 0 hr 25 min

Scoring: 30 points

LESSON 3: SPECIAL CASES

Study: Special Cases

Identify and factor differences of squares and perfect-square trinomials.

Duration: 0 hr 50 min

Checkup: Practice Problems

Complete a set of practice problems to hone your calculation skills.

Duration: 0 hr 30 min

Quiz: Factoring a Difference of Squares

Take a quiz to assess your understanding of the material.

Duration: 0 hr 25

min Scoring: 30 points

Quiz: Factoring Perfect Square Trinomials

Take a quiz to assess your understanding of the material.

Duration: 0 hr 25

min Scoring: 20 points

LESSON 4: SOLVING QUADRATIC EQUATIONS**Study: Solving Quadratic Equations**

Learn about solving quadratic equations using factoring and the zero product rule, manipulating a quadratic equation into standard form, and solving quadratic equations with perfect-square trinomials.

Duration: 0 hr 50 min

Checkup: Practice Problems

Complete a set of practice problems to hone your calculation skills.

Duration: 0 hr 30 min

Quiz: Factoring with the Zero Product Rule

Take a quiz to assess your understanding of the material.

Duration: 0 hr 25

min Scoring: 28 points

Quiz: Converting Quadratics to Standard Form

Take a quiz to assess your understanding of the material.

Duration: 0

hr 25 min Scoring: 28 points

Quiz: Quadratics with Perfect Square Trinomials

Take a quiz to assess your understanding of the material.

Duration: 0

hr 25 min Scoring: 16 points

LESSON 5: COMPLETING THE SQUARE

Study: Completing the Square

Learn the "Completing the Square" method of solving quadratic equations. Practice adding a strategic number to both sides of an equation to make one side a perfect-square trinomial. Then solve the equation by taking the square root of both sides and simplifying. Use Algebra Tiles to determine the number needed to complete the square.

Duration: 0 hr 50 min

Checkup: Practice Problems

Complete a set of practice problems to hone your calculation skills.

Duration: 0 hr 30 min

Quiz: Completing the Square

Take a quiz to assess your understanding of the material.

Duration: 0 hr 25 min Scoring:

24 points

Quiz: Completing the Square (Advanced)

Take a quiz to assess your understanding of the material.

Duration: 0 hr 25

min Scoring: 24 points

LESSON 6: THE QUADRATIC FORMULA

Study: The Quadratic Formula

Learn about types of equations that can be solved with the quadratic formula; complex numbers; discriminants; and finding roots (including complex roots) using the quadratic formula.

Duration: 0 hr 50 min

Checkup: Practice Problems

Complete a set of practice problems to hone your calculation skills.

Duration: 0 hr 30 min

Quiz: Complex Numbers and Discriminants

Take a quiz to assess your understanding of the material.

Duration: 0 hr

25 min Scoring: 28 points

Quiz: The Quadratic Formula

Take a quiz to assess your understanding of the material.

Duration: 0 hr 25 min Scoring:

30 points

LESSON 7: GRAPHS OF QUADRATIC FUNCTIONS

Study: Graphs of Quadratic Functions

Relate factors of a quadratic function to the graph of a parabola and its corresponding x -intercepts. Locate the vertex of a quadratic function graphically and algebraically. Use the discriminant of the quadratic formula to identify the number and types of solutions to a given quadratic equation, as well as to visualize its corresponding graph.

Duration: 0 hr 50 min

Checkup: Practice Problems

Complete a set of practice problems to hone your calculation skills.

Duration: 0 hr 30 min

Quiz: Graphs of Quadratic Functions

Take a quiz to assess your understanding of the material.

Duration: 0 hr 25 min

Scoring: 30 points

Quiz: Working with the Discriminant

Take a quiz to assess your understanding of the material.

Duration: 0 hr 25 min

Scoring: 20 points

LESSON 8: APPLICATIONS OF QUADRATIC FUNCTIONS

Study: Solving Problems Using Quadratic Functions

Set up and solve application problems involving quadratic functions.

Duration: 0 hr 50 min

Checkup: Practice Problems

Complete a set of practice problems on applications of quadratic functions.

Duration: 0 hr

30 min

Quiz: Applications of Quadratic Functions

Take a quiz to assess your understanding of the material.

Duration: 0 hr 25

min Scoring: 20 points

LESSON 9: WRAP-UP

Practice: Assignment

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Submit your work for a set of 20 practice problems.

Duration: 1 hr Scoring: 100 points

Review: Review Exercises

Take part in interactive games to review unit material in preparation for upcoming assessments.

Duration: 1 hr

Discuss: Getting to the Root of the Problem

Take part in a discussion about applying methods learned in this unit.

Duration: 0 hr 20 min Scoring: 30 points

Test (CS): Quadratic Functions

Take a computer-scored test to assess what you have learned in this unit.

Duration: 0

hr 40 min Scoring: 60 points

Test (TS): Quadratic Functions

Take a teacher-scored test to assess what you have learned in this unit.

Duration: 0 hr

30 min Scoring: 50 points

LESSON 10: DIAGNOSTIC

Diagnostic: Quadratic Functions

Take a diagnostic unit test that will generate a study plan based on your responses.

Duration: 0 hr 40 min Scoring: 20 points

UNIT 4: UNDOING FUNCTIONS AND MOVING THEM AROUND

LESSON 1: INVERSES

Study: Inverses

Learn about undoing functions, mapping diagrams of inverse functions, and finding the equation for an inverse function.

Duration: 0 hr 50 min

Checkup: Practice Problems

Complete a set of practice problems to hone your calculation skills.

Duration: 0 hr 30 min

Quiz: Inverses with Variables x and y

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Take a quiz to assess your understanding of the material.

Duration: 0 hr 25 min

Scoring: 16 points

Quiz: Inverses with Other Variables

Take a quiz to assess your understanding of the material.

Duration: 0 hr 25 min

Scoring: 16 points

LESSON 2: GRAPHS OF INVERSES

Study: Graphs of Inverses

Learn how to convert the graph of a given function to the graph of its inverse by swapping coordinates of all (x, y) pairs. Use mapping diagrams, horizontal line tests, and the concept of symmetry across the line $y = x$ to determine if the inverse of a given function is also a function.

Duration: 0 hr 50 min

Checkup: Practice Problems

Complete a set of practice problems to hone your calculation skills.

Duration: 0 hr 30 min

Quiz: Graphs of Inverses

Take a quiz to assess your understanding of the material.

Duration: 0 hr 25 min Scoring: 18

points

LESSON 3: PARENT FUNCTIONS

Study: Parent Functions

Learn about the properties and graphs of linear parent functions, quadratic parent functions, absolute value parent functions, and reciprocal parent functions.

Duration: 0 hr 50 min Scoring: 0 points

Checkup: Practice Problems

Complete a set of practice problems to hone your calculation skills.

Duration: 0 hr 30 min

Scoring: 0 points

Quiz: Parent Functions

Take a quiz to assess your understanding of the material.

Duration: 0 hr 25 min Scoring: 20

points

LESSON 4: SHIFTING FUNCTIONS

Study: Shifting Functions

Learn about shifting graphs of functions up/down and left/right by changing the coordinates of each ordered pair. Learn about changing the equation of a function to shift its graph vertically or horizontally and about combining vertical and horizontal shifts.

Duration: 0 hr 50 min

Checkup: Practice Problems

Complete a set of practice problems to hone your calculation skills.

Duration: 0 hr 30 min

Quiz: Shifting Functions Vertically

Take a quiz to assess your understanding of the material.

Duration: 0 hr 25 min

Scoring: 18 points

Quiz: Shifting Functions Horizontally

Take a quiz to assess your understanding of the material.

Duration: 0 hr 25 min

Scoring: 16 points

Quiz: Shifting Functions Vertically and Horizontally

Take a quiz to assess your understanding of the material.

Duration: 0 hr 25 min Scoring: 18 points

LESSON 5: STRETCHING FUNCTIONS VERTICALLY

Study: Stretching Functions Vertically

Learn about vertically stretching or compressing a function's graph by multiplying by a constant; flipping the graph by multiplying by a negative constant; and combining vertical stretches with vertical or horizontal shifts.

Duration: 0 hr 50 min

Checkup: Practice Problems

Complete a set of practice problems to hone your calculation skills.

Duration: 0 hr 30 min

Quiz: Stretching Functions Vertically

Take a quiz to assess your understanding of the material.

Duration: 0 hr 25 min

Scoring: 20 points

Study: Solving the Ball-Tossing Problem

Learn about shifting and stretching graphs and using inverses and about how

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to apply these methods to the real-world problem of tossing a ball. Learn about using average velocity as an estimate of instantaneous velocity.

Duration: 0 hr 50 min

LESSON 6: TRANSFORMATIONS OF PARENT FUNCTIONS

Study: Transformations of Parent Functions

Learn how to perform vertical shifts, horizontal shifts, vertical stretches and compressions, horizontal stretches and compressions, and any combination of these transformations on parent functions.

Duration: 0 hr 50 min Scoring: 0 points

Checkout: Practice Problems

Complete a set of practice problems to hone your calculation skills.

Duration: 0 hr 30 min

Scoring: 0 points

Quiz: Transformations of Parent Functions

Take a quiz to assess your understanding of the material.

Duration: 0 hr 25

min Scoring: 30 points

LESSON 7: WRAP-UP

Practice: Assignment

Submit your work for a set of 20 practice problems.

Duration: 1 hr Scoring: 100 points

Review: Review Exercise

Take part in interactive games to review unit material in preparation for upcoming assessments.

Duration: 1 hr

Discuss: The Power of Undoing or Shifting Functions

Take part in a three- to five-question discussion about applying methods learned in this unit.

Duration: 0 hr 20 min Scoring: 30 points

Test (CS): Undoing Functions and Moving Them Around

Take a computer-scored test to assess what you have learned in this unit.

Duration: 0 hr 40 min Scoring: 75 points

Test (TS): Undoing Functions and Moving Them Around

Take a teacher-scored test to assess what you have learned in this unit.

Duration: 0 hr 30 min Scoring: 50 points

LESSON 8: DIAGNOSTIC

Diagnostic: Undoing Functions and Moving Them Around

Take a diagnostic unit test that will generate a study plan based on your responses.

Duration: 0 hr 40 min Scoring: 25 points

UNIT 5: POLYNOMIAL FUNCTIONS II

LESSON 1: WHAT IS A POLYNOMIAL?

Study: What Is a Polynomial?

Learn to identify, classify, evaluate, and graph polynomial functions and expressions.

Practice writing polynomials in descending order, as well as using the degree of a given polynomial function to predict the general shape of its graph.

Duration: 0 hr 50 min

Checkup: Practice Problems

Complete a set of practice problems to hone your calculation skills.

Duration: 0 hr 30 min

Quiz: What Is a Polynomial?

Take a quiz to assess your understanding of the material.

Duration: 0 hr 25 min Scoring:

16 points

Quiz: Graphs of Polynomial Functions

Take a quiz to assess your understanding of the material.

Duration: 0 hr 25 min

Scoring: 30 points

LESSON 2: FACTORING (REVIEWED)

Study: Factoring (Reviewed)

Review the basic methods of factoring and apply these methods to quadratic expressions.

Use the Quadratic Formula to solve quadratic functions. Review how the discriminant of the Quadratic Formula can reveal the number and types of roots for a given quadratic function.

Duration: 0 hr 50 min

Checkup: Practice Problems

Complete a set of practice problems to hone your calculation skills.

Duration: 0 hr 30 min

Quiz: Factoring (Algebraic)

Take a quiz to assess your understanding of the material.

Duration: 0 hr 25 min Scoring: 20

points

Quiz: Factoring (Quadratic)

Take a quiz to assess your understanding of the material.

Duration: 0 hr 25 min Scoring: 30

points

LESSON 3: IMAGINARY NUMBERS

Study: Imaginary Numbers

Learn about imaginary and complex numbers; perform basic arithmetic operations on complex numbers; and solve equations with imaginary and complex numbers.

Duration: 0 hr 50 min

Checkup: Practice Problems

Complete a set of practice problems to hone your calculation skills.

Duration: 0 hr 30 min

Quiz: Imaginary Numbers

Take a quiz to assess your understanding of the material.

Duration: 0 hr 25 min Scoring: 16

points

Quiz: Operations on Complex Numbers

Take a quiz to assess your understanding of the material.

Duration: 0 hr 25

min Scoring: 30 points

LESSON 4: SYNTHETIC DIVISION

Study: Synthetic Division

Learn two methods for dividing polynomials — long division and synthetic division. Use synthetic division to expedite the process of finding factors and roots of polynomial expressions.

Duration: 0 hr 50 min

Checkup: Practice Problems

Complete a set of practice problems to hone your calculation skills.

Duration: 0 hr 30 min

Quiz: Synthetic Division

Take a quiz to assess your understanding of the material.

Duration: 0 hr 25 min Scoring: 20

points

LESSON 5: FACTORING POLYNOMIALS COMPLETELY**Study: Factoring Polynomials Completely**

Learn about the remainder, factor, rational-roots, complex-conjugate, and conjugate-radical theorems. Learn to use synthetic division to factor higher-order polynomials.

Duration: 0 hr 50 min

Checkup: Practice Problems

Complete a set of practice problems to hone your calculation skills.

Duration: 0 hr 30 min

Quiz: Remainder and Factor Theorems

Take a quiz to assess your understanding of the material.

Duration: 0 hr 25 min

Scoring: 30 points

Quiz: Factoring Polynomials Completely

Take a quiz to assess your understanding of the material.

Duration: 0 hr 25

min Scoring: 20 points

LESSON 6: WRAP-UP**Practice: Assignment**

Submit your work for a set of 20 practice problems.

Duration: 1 hr Scoring: 100 points

Review: Review Exercises

Take part in interactive games to review unit material in preparation for upcoming assessments.

Duration: 1 hr

Discuss: Final Thoughts on Polynomials

Take part in a three- to five-question discussion about applying methods learned in this unit.

Duration: 0 hr 20 min Scoring: 30 points

Test (CS): Polynomial Functions II

Take a computer-scored test to assess what you have learned in this unit.

Duration:

0 hr 40 min Scoring: 75 points

Test (TS): Polynomial Functions II

Take a teacher-scored test to assess what you have learned in this unit.

Duration: 0

hr 30 min Scoring: 50 points

LESSON 7: DIAGNOSTIC

Diagnostic: Polynomial Functions II

Take a diagnostic unit test that will generate a study plan based on your responses.

Duration: 0 hr 40 min Scoring: 25 points

UNIT 6: ALGEBRA II SEMESTER 1 REVIEW AND EXAM

LESSON 1: PREPARING FOR THE SEMESTER EXAM

Review: Semester Review

Prepare for the semester exam by reviewing key concepts covered in Algebra II Semester 1.

Duration: 1 hr

Exam: Semester Exam

Duration: 0 hr 50 min Scoring: 285 points

UNIT 7: RATIONAL EXPRESSIONS AND EQUATIONS

LESSON 1: PROPORTIONS

Study: Proportions

Learn the definition of a rational expression and about using proportional reasoning to solve problems. Explore real-world examples of proportional reasoning.

Duration: 0 hr 40 min

Checkup: Practice Problems

Complete a set of practice problems to hone your calculation skills.

Duration: 0 hr 25 min

Quiz: Proportions

Take a quiz to assess your understanding of the material.

Duration: 0 hr 25 min Scoring: 16 points

LESSON 2: RATIONAL EXPRESSIONS**Study: Rational Expressions**

Learn about finding the value of a rational expression and about undefined rational expressions.

Duration: 0 hr 40 min

Checkup: Practice Problems

Complete a set of practice problems to hone your calculation skills.

Duration: 0 hr 25 min

Quiz: Rational Expressions

Take a quiz to assess your understanding of the material.

Duration: 0 hr 25 min Scoring: 16 points

LESSON 3: SIMPLIFYING RATIONAL EXPRESSIONS**Study: Simplifying Rational Expressions**

Practice finding and dividing out common factors in numerators and denominators of rational expressions. Explore the crucial difference between common factors and terms.

Duration: 0 hr 40 min

Checkup: Practice Problems

Complete a set of practice problems to hone your calculation skills.

Duration: 0 hr 25 min

Quiz: Simplifying Rational Expressions

Take a quiz to assess your understanding of the material.

Duration: 0 hr 25 min Scoring: 16 points

LESSON 4: MULTIPLYING AND DIVIDING RATIONAL EXPRESSIONS

Study: Multiplying and Dividing Rational Expressions

Review multiplying and dividing numerical fractions, multiplying rational expressions, dividing rational expressions, and simplifying the results.

Duration: 0 hr 40 min

Checkup: Practice Problems

Complete a set of practice problems to hone your calculation skills.

Duration: 0 hr 25 min

Quiz: Multiplying Rational Expressions

Take a quiz to assess your understanding of the material.

Duration: 0 hr 25 min

Scoring: 18 points

Quiz: Dividing Rational Expressions

Take a quiz to assess your understanding of the material.

Duration: 0 hr 25 min

Scoring: 18 points

LESSON 5: ADDING AND SUBTRACTING RATIONAL EXPRESSIONS**Study: Adding and Subtracting Rational Expressions**

Review adding and subtracting numerical fractions; adding and subtracting rational expressions with like denominators; finding least common denominators; multiples of rational expressions; and adding and subtracting rational expressions with unlike denominators.

Duration: 0 hr 40 min

Checkup: Practice Problems

Complete a set of practice problems to hone your calculation skills.

Duration: 0 hr 25 min

Quiz: Adding and Subtracting Rational Expressions

Take a quiz to assess your understanding of the material.

Duration: 0 hr 25 min Scoring: 22 points

LESSON 6: FINDING THE GOLDEN RATIO**Study: Finding the Golden Ratio**

Mimic the ancient Greeks by using just a straightedge and compass to divide any line segment into pieces exhibiting the golden ratio. Calculate the exact value of phi in the golden ratio by creating a rational equation and then solving it via the quadratic formula. Explore where this widespread ratio appears in nature, art, architecture, and the human body. See how these concepts connect to golden rectangles and self-similar spirals.

Duration:

LESSON 7: INVERSE VARIATION

Study: Inverse Variation

Review direct variation and how increasing input leads to proportionally increasing output. Review inverse variation and how increasing input leads to proportionally decreasing output. Review finding the constant of variation.

Duration: 0 hr 40 min

Checkup: Practice Problems

Complete a set of practice problems to hone your calculation skills.

Duration: 0 hr 25 min

Quiz: Inverse Variation

Take a quiz to assess your understanding of the material.

Duration: 0 hr 25 min Scoring: 18 points

LESSON 8: RATIONAL FUNCTIONS

Study: Rational Functions

Learn the definition of a rational function and about finding the domain of a given function. Explore the horizontal and vertical asymptotes of rational functions.

Duration: 0 hr 40 min

Checkup: Practice Problems

Complete a set of practice problems to hone your calculation skills.

Duration: 0 hr 25 min

Quiz: Rational Functions

Take a quiz to assess your understanding of the material.

Duration: 0 hr 25 min Scoring: 28 points

LESSON 9: VERTICAL ASYMPTOTES

Study: Vertical Asymptotes

Learn about graphs of rational functions, finding vertical asymptotes, and graphing rational functions with more than one vertical asymptote.

Duration: 0 hr 40 min

Checkup: Practice Problems

Complete a set of practice problems to hone your calculation skills.

Duration: 0 hr 25 min

Quiz: Finding Vertical Asymptotes

Take a quiz to assess your understanding of the material.

Duration: 0 hr 25 min

Scoring: 26 points

Quiz: More than One Vertical Asymptote

Take a quiz to assess your understanding of the material.

Duration: 0 hr 25

min Scoring: 24 points

LESSON 10: GRAPHING RATIONAL FUNCTIONS**Study: Graphing Rational Functions**

Learn about graphing rational functions with variables in the numerator, constructing a sign chart, and picking test numbers. Learn about rational functions with a singular point.

Duration: 0 hr 40

min

Checkup: Practice Problems

Complete a set of practice problems to hone your calculation skills.

Duration: 0 hr 25 min

Quiz: Graphing Rational Functions

Take a quiz to assess your understanding of the material.

Duration: 0 hr 25 min

Scoring: 30 points

Study: Solving the Lever Problem

Explore a case study about solving a lever problem using rational functions.

Duration: 0 hr 40 min

LESSON 11: WRAP-UP**Practice: Assignment**

Submit your work for a set of 20 practice problems.

Duration: 0 hr 50 min Scoring: 100 points

Review: Review Exercises

Take part in interactive games to review unit material in preparation for upcoming

assessments.

Duration: 1 hr

Discuss: Undefined and Infinite Numbers

Take part in a three- to seven-question discussion about applying methods learned in this unit.

Duration: 0 hr 20 min Scoring: 30 points

Test (CS): Rational Expressions and Equations

Take a computer-scored test to assess what you have learned in this unit.

Duration: 0 hr 40 min Scoring: 102 points

Test (TS): Rational Expressions and Equations

Take a teacher-scored test to assess what you have learned in this unit.

Duration: 0 hr 30 min Scoring: 50 points

LESSON 12: DIAGNOSTIC

Diagnostic: Rational Expressions and Equations

Take a diagnostic unit test that will generate a study plan based on your responses.

Duration: 0 hr 40 min Scoring: 33 points

UNIT 8: RADICAL EXPRESSIONS AND EQUATIONS

LESSON 1: BASICS OF RADICALS

Study: Basics of Radicals

Learn the definition of radical expression. Explore simplifying the product and quotient of radicals and simplifying individual radicals.

Duration: 0 hr 40 min

Checkup: Practice Problems

Complete a set of practice problems to hone your calculation skills.

Duration: 0 hr 25 min

Quiz: Simplifying Products of Radicals

Take a quiz to assess your understanding of the material.

Duration: 0 hr 25 min

Scoring: 30 points

Quiz: Simplifying Quotients of Radicals

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Take a quiz to assess your understanding of the material.

Duration: 0 hr 25

min Scoring: 30 points

LESSON 2: MULTIPLYING AND DIVIDING RADICALS

Study: Multiplying and Dividing Radicals

Learn about multiplying and dividing radical expressions that include variables and about using the FOIL (first, inner, outer, last) method to simplify radical expressions.

Duration: 0 hr 40 min

Checkup: Practice Problems

Complete a set of practice problems to hone your calculation skills.

Duration: 0 hr 25 min

Quiz: Multiplying Radicals

Take a quiz to assess your understanding of the material.

Duration: 0 hr 25 min Scoring: 30

points

Quiz: Dividing Radicals

Take a quiz to assess your understanding of the material.

Duration: 0 hr 25 min Scoring: 28

points

LESSON 3: ADDING AND SUBTRACTING RADICALS

Study: Adding and Subtracting Radicals

Learn about adding and subtracting radical expressions by combining like terms and about simplifying terms to get the same radicand.

Duration: 0 hr 40 min

Checkup: Practice Problems

Complete a set of practice problems to hone your calculation skills.

Duration: 0 hr 25 min

Quiz: Adding and Subtracting Radicals

Take a quiz to assess your understanding of the material.

Duration: 0 hr 25 min

Scoring: 30 points

LESSON 4: RATIONALIZING DENOMINATORS

Study: Rationalizing Denominators

Learn about rationalizing a denominator in order to simplify a fraction with a radical expression in the denominator. Learn about multiplying by the conjugate of a denominator.

Duration: 0 hr 40 min

Checkup: Practice Problems

Complete a set of practice problems to hone your calculation skills.

Duration: 0 hr 25 min

Quiz: Rationalizing Denominators

Take a quiz to assess your understanding of the material.

Duration: 0 hr 25 min

Scoring: 30 points

LESSON 5: SOLVING RADICAL EQUATIONS**Study: Solving Radical Equations**

Learn how to solve equations with radical expressions by isolating the radical and squaring both sides.

Duration: 0 hr 40 min

Checkup: Practice Problems

Complete a set of practice problems to hone your calculation skills.

Duration: 0 hr 25 min

Quiz: Solving Radical Equations

Take a quiz to assess your understanding of the material.

Duration: 0 hr 25 min

Scoring: 30 points

Study: Applications of Radical Equations

Explore case studies in order to practice methods of solving radical equations in applied settings.

Duration: 0 hr 40 min

LESSON 6: SQUARE ROOT FUNCTIONS**Study: Square Root Functions**

Learn about the properties and graph of the square root parent function, its inverse relationship to a quadratic parent function with a limited domain, and how to perform vertical shifts, horizontal shifts, vertical stretches and compressions, horizontal stretches and compressions, and any combination of these transformations on square root parent functions.

Duration: 0 hr 40 min Scoring: 0 points

Checkup: Practice Problems

Complete a set of practice problems to hone your calculation skills.

Duration: 0 hr 30 min

Scoring: 0 points

Quiz: Square Root Functions

Take a quiz to assess your understanding of the material.

Duration: 0 hr 25 min Scoring:

20 points

LESSON 7: THE SKID DISTANCE PROBLEM**Study: The Skid Distance Problem**

Learn how the length of skid marks left by a vehicle is an application of square root functions. Use the skid distance equation to solve for drag factor of various road surfaces, as well as skid mark lengths and original speed of a variety of vehicles.

Duration: 0 hr 40 min Scoring: 0 points

Checkup: Practice Problems

Complete a set of practice problems to hone your calculation skills.

Duration: 0 hr 30 min

Scoring: 0 points

Quiz: The Skid Distance Problem

Take a quiz to assess your understanding of the material.

Duration: 0 hr 25 min

Scoring: 20 points

LESSON 8: RATIONAL EXPONENTS**Study: Rational Exponents**

Learn about fractional exponents and n th roots; odd and even indices of radicals; the method of notation for writing an n th root; using a fractional exponent; and exponential expressions with decimal powers.

Duration:

0 hr 40 min

Checkup: Practice Problems

Complete a set of practice problems to hone your calculation skills.

Duration: 0 hr 25 min

Quiz: Fractional Exponents - Part 1

Take a quiz to assess your understanding of the material.

Duration: 0 hr 25 min

Scoring: 30 points

Quiz: Fractional Exponents - Part 2

Take a quiz to assess your understanding of the material.

Duration: 0 hr 25 min

Scoring: 30 points

LESSON 9: COMPLEX NUMBERS

Study: Complex Numbers

Learn about square roots of negative numbers; imaginary units; parts of a complex number; adding and subtracting complex numbers by collecting like terms and simplifying; multiplying two complex numbers using the FOIL method; and dividing complex numbers using complex conjugates.

Duration: 0 hr 40 min

Checkup: Practice Problems

Complete a set of practice problems to hone your calculation skills.

Duration: 0 hr 25 min

Quiz: Adding and Subtracting Complex Numbers

Take a quiz to assess your understanding of the material.

Duration:

0 hr 25 min Scoring: 30 points

Quiz: Multiplying and Dividing Complex Numbers

Take a quiz to assess your understanding of the material.

Duration:

0 hr 25 min Scoring: 30 points

LESSON 10: WRAP-UP

Practice: Assignment

Submit your work for a set of 20 practice problems.

Duration: 0 hr 50 min Scoring: 100 points

Review: Review Exercises

Take part in interactive games to review unit material in preparation for upcoming assessments.

Duration: 1 hr

Discuss: Rooting out Squares and Cubes

Take part in a three- to seven-question discussion about applying methods learned in this unit.

Duration: 0 hr 20 min Scoring: 30 points

Test (CS): Radical Expressions and Equations

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Take a computer-scored test to assess what you have learned in this unit.

Duration: 0 hr 40 min Scoring: 123 points

Test (TS): Radical Expressions and Equations

Take a teacher-scored test to assess what you have learned in this unit.

Duration: 0 hr 30 min Scoring: 50 points

LESSON 11: DIAGNOSTIC

Diagnostic: Radical Expressions and Equations

Take a diagnostic unit test that will generate a study plan based on your responses.

Duration: 0 hr 40 min Scoring: 41 points

UNIT 9: EXPONENTS LOGARITHMS & THEIR GRAPHS

LESSON 1: EXPONENTS AND RADICALS

Study: Rational Exponents and Radical Expressions

Learn the rules of exponents and how to express radicals.

Duration: 0 hr 40 min

Checkup: Practice Problems

Complete a set of practice problems on exponents and radicals.

Duration: 0 hr 25 min

Quiz: Exponents and Radicals

Take a quiz to assess your understanding of the material.

*Duration: 0 hr 25 min Scoring:
20 points*

LESSON 2: EXPONENTIAL FUNCTIONS

Study: Exponential Functions

Define the standard form of an exponential function and explore a variety of its applications, such as exponential growth and decay (in the forms of doubling time and half-life), as well as compound interest. Compare compound interest to continuously compounded interest, using the irrational number e .

Duration: 0 hr

40 min

Checkpoint: Practice Problems

Complete a set of practice problems to hone your calculation skills.

Duration: 0 hr 25 min

Quiz: Evaluating Exponential Functions

Take a quiz to assess your understanding of the material.

Duration: 0 hr 25

min Scoring: 30 points

Quiz: Calculating Exponential Growth

Take a quiz to assess your understanding of the material.

Duration: 0 hr 25 min

Scoring: 28 points

LESSON 3: EXAMPLES AND APPLICATIONS OF EXPONENTIAL FUNCTIONS

Study: Examples and Applications of Exponential Functions

Explore case studies in exponential growth and decay and logarithmic growth.

Duration: 0 hr 40 min

LESSON 4: GRAPHS OF EXPONENTIAL FUNCTIONS

Study: Graphs of Exponential Functions

Learn about the shape of graphs of exponential functions with various bases and about finding the domain and range of exponential functions.

Duration: 0 hr 40 min

Checkpoint: Practice Problems

Complete a set of practice problems to hone your calculation skills.

Duration: 0 hr 25 min

Quiz: Graphs of Exponential Functions

Take a quiz to assess your understanding of the material.

Duration: 0 hr 25 min

Scoring: 30 points

LESSON 5: LOGARITHMIC FUNCTIONS

Study: Logarithmic Functions

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Learn about undoing exponential functions, graphing the inverse of an exponential, or logarithmic, function, and the common and natural logarithm.

Duration: 0 hr 40 min

Checkup: Practice Problems

Complete a set of practice problems to hone your calculation skills.

Duration: 0 hr 25 min

Quiz: Logarithmic Functions

Take a quiz to assess your understanding of the material.

Duration: 0 hr 25 min Scoring:

30 points

LESSON 6: GRAPHS OF LOGARITHMIC FUNCTIONS

Study: Graphs of Logarithmic Functions

Learn about the shape of graphs of logarithmic functions with various bases and about the domain and range of logarithmic functions.

Duration: 0 hr 40 min

Checkup: Practice Problems

Complete a set of practice problems to hone your calculation skills.

Duration: 0 hr 25 min

Quiz: Graphs of Logarithmic Functions

Take a quiz to assess your understanding of the material.

Duration: 0 hr 25

min Scoring: 30 points

LESSON 7: MORE ON GRAPHS OF LOGARITHMIC FUNCTIONS

Study: More on Graphs of Logarithmic Functions

Learn the graphs of key logarithmic functions.

Duration: 0 hr 40 min

Checkup: Practice Problems

Complete a set of practice problems on graphs of logarithmic functions.

Duration: 0 hr 25

min

Quiz: More on Graphs of Logarithmic Functions

Take a quiz to assess your understanding of the material.

Duration: 0

hr 25 min Scoring: 20 points

LESSON 8: PROPERTIES OF EXPONENTS AND LOGARITHMS

Study: Properties of Exponents and Logarithms

Review product quotient and power laws of exponents; rewriting the log of a product as the sum of two logs; rewriting the log of a quotient as the difference of two logs; simplifying the log of a power; and using the change-of-base formula to rewrite logarithms.

Duration: 0 hr 40 min

Checkup: Practice Problems

Complete a set of practice problems to hone your calculation skills.

Duration: 0 hr 25 min

Quiz: Equivalent Exponential Expressions

Take a quiz to assess your understanding of the material.

Duration: 0 hr 25

min Scoring: 16 points

Quiz: Equivalent Logarithmic Expressions

Take a quiz to assess your understanding of the material.

Duration: 0 hr 25

min Scoring: 30 points

Quiz: Evaluating Logarithms

Take a quiz to assess your understanding of the material.

Duration: 0 hr 25 min Scoring:

30 points

LESSON 9: SOLVING EXPONENTIAL EQUATIONS

Study: Solving Exponential Equations

Learn about using ordinary algebra and the properties of logarithms to solve exponential equations. Answer questions inspired by the classic chessboard problem.

Duration: 0 hr 40 min

Checkup: Practice Problems

Complete a set of practice problems to hone your calculation skills.

Duration: 0 hr 25 min

Quiz: Solving Exponential Equations

Take a quiz to assess your understanding of the material.

Duration: 0 hr 25 min

Scoring: 30 points

LESSON 10: SOLVING LOGARITHMIC EQUATIONS

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Study: Solving Logarithmic Equations

Learn about using ordinary algebra and the definition of a logarithm to solve logarithmic equations. Answer questions about energy in earthquakes.

Duration: 0 hr 40 min

Checkup: Practice Problems

Complete a set of practice problems to hone your calculation skills.

Duration: 0 hr 25 min

Quiz: Solving Logarithmic Equations

Take a quiz to assess your understanding of the material.

Duration: 0 hr 25 min

Scoring: 30 points

LESSON 11: WRAP-UP

Practice: Assignment

Submit your work for a set of 20 practice problems.

Duration: 0 hr 50 min Scoring: 100 points

Review: Review Exercises

Take part in interactive games to review unit material in preparation for upcoming assessments.

Duration: 1 hr

Discuss: The Consequences of Exponential Growth

Take part in a three- to seven-question discussion about applying methods learned in this unit.

Duration: 0 hr 20 min Scoring: 30 points

Test (CS): Exponents Logarithms & Their Graphs

Take a computer-scored test to assess what you have learned in this unit.

Duration: 0 hr 40 min Scoring: 111 points

Test (TS): Exponents Logarithms & Their Graphs

Take a teacher-scored test to assess what you have learned in this unit.

Duration: 0 hr 30 min Scoring: 50 points

LESSON 12: DIAGNOSTIC

Diagnostic: Exponents Logarithms & Their Graphs

Take a diagnostic unit test that will generate a study plan based on

your responses.

Duration: 0 hr 40 min Scoring: 37 points

UNIT 10: SEQUENCES AND SERIES

LESSON 1: FINDING PATTERNS

Study: Finding Patterns

Learn about image, letter, and number patterns and about finding the next term.

Duration: 0 hr

40 min

Checkup: Practice Problems

Complete a set of practice problems to hone your calculation skills.

Duration: 0 hr 25 min

Quiz: Finding Patterns

Take a quiz to assess your understanding of the material.

Duration: 0 hr 25 min Scoring: 28

points

Quiz: Letter and Number Patterns

Take a quiz to assess your understanding of the material.

Duration: 0 hr 25 min

Scoring: 24 points

LESSON 2: ARITHMETIC SEQUENCES

Study: Arithmetic Sequences

Learn about arithmetic sequences, common difference, explicit and recursive formulas, and finding the next term in a sequence.

Duration: 0 hr 40 min

Checkup: Practice Problems

Complete a set of practice problems to hone your calculation skills.

Duration: 0 hr 25 min

Quiz: Arithmetic Sequences

Take a quiz to assess your understanding of the material.

Duration: 0 hr 25 min Scoring:

24 points

Quiz: Rules For Arithmetic Sequences

Take a quiz to assess your understanding of the material.

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Duration: 0 hr 25 min
Scoring: 28 points

LESSON 3: GEOMETRIC SEQUENCES

Study: Geometric Sequences

Explore geometric sequences as sets of numbers in which the ratio between any two consecutive numbers is a constant. Compare how the recursive formula and the explicit formula allow you to find the value of any term in a geometric sequence. Explore the graphs of geometric sequences as exponential curves.

Duration: 0 hr 40
min

Checkup: Practice Problems

Complete a set of practice problems to hone your calculation skills.

Duration: 0 hr 25 min

Quiz: Geometric Sequences

Take a quiz to assess your understanding of the material.

Duration: 0 hr 25 min Scoring:
26 points

Quiz: Formulas for Geometric Sequences

Take a quiz to assess your understanding of the material.

Duration: 0 hr 25
min Scoring: 24 points

LESSON 4: APPLICATIONS OF NUMBER SEQUENCES

Study: Applications of Number Sequences

Learn about applications and models of arithmetic, geometric, and special sequences.

Duration: 0 hr 40 min

Checkup: Practice Problems

Complete a set of practice problems to hone your calculation skills.

Duration: 0 hr 25 min

Quiz: Applications of Arithmetic Sequences

Take a quiz to assess your understanding of the material.

Duration: 0 hr
25 min Scoring: 24 points

Quiz: Applications of Geometric Sequences

Take a quiz to assess your understanding of the material.

*Duration: 0 hr
25 min Scoring: 28 points*

Quiz: Applications of Other Sequences

Take a quiz to assess your understanding of the material.

*Duration: 0 hr 25 min
Scoring: 20 points*

LESSON 5: NUMBER SERIES

Study: Number Series

Explore arithmetic and geometric number series.

Duration: 0 hr 40 min

Checkup: Practice Problems

Complete a set of practice problems to hone your calculation skills.

Duration: 0 hr 25 min

Quiz: Arithmetic Series

Take a quiz to assess your understanding of the material.

*Duration: 0 hr 25 min Scoring: 28
points*

Quiz: Geometric Series

Take a quiz to assess your understanding of the material.

*Duration: 0 hr 25 min Scoring: 28
points*

LESSON 6: WRAP-UP

Practice: Assignment

Submit your work for a set of 20 practice problems.

Duration: 0 hr 50 min Scoring: 100 points

Review: Review Exercises

Take part in interactive games to review unit material in preparation for upcoming assessments.

Duration: 1 hr

Discuss: Examining Sequences and Series

Take part in a three- to seven-question discussion about applying methods learned in this unit.

Duration: 0 hr 20 min Scoring: 30 points

Test (CS): Sequences and Series

Take a computer-scored test to assess what you have learned in this unit.

Duration: 0

hr 40 min Scoring: 75 points

Test (TS): Sequences and Series

Take a teacher-scored test to assess what you have learned in this unit.

Duration: 0

hr 30 min Scoring: 50 points

LESSON 7: DIAGNOSTIC

Diagnostic: Sequences and Series

Take a diagnostic unit test that will generate a study plan based on your responses.

Duration: 0 hr 40 min Scoring: 25 points

UNIT 11: DATA ANALYSIS & PROBABILITY

LESSON 1: REVIEW OF GRAPHICAL ANALYSIS OF DATA

Study: Review of Graphical Analysis of Data

Learn about the different ways to express data graphically and the various shapes or properties these representations have.

Duration: 0 hr 40 min

Checkup: Practice Problems

Complete a set of practice problems to hone your calculation skills.

Duration: 0 hr 25 min

Quiz: Types of Data Displays

Take a quiz to assess your understanding of the material.

Duration: 0 hr 25 min Scoring:

26 points

Quiz: Graphical Data Analysis

Take a quiz to assess your understanding of the material.

Duration: 0 hr 25 min Scoring:

24 points

LESSON 2: REVIEW OF NUMERICAL ANALYSIS OF DATA

Study: Review of Numerical Analysis of Data

Learn about the numerical analysis of data as it relates to means, medians, modes, IQR outliers, test quartiles, boxplots, variance, and standard deviation.

Duration: 0 hr 40 min Scoring: 0 points

Checkup: Practice Problems

Complete a set of practice problems to hone your calculation skills.

Duration: 0 hr 25 min Scoring: 0 points

Quiz: Measures of Central Tendency

Take a quiz to assess your understanding of the material.

Duration: 0 hr 25 min Scoring: 30 points

Quiz: Quartiles and Boxplots

Take a quiz to assess your understanding of the material.

Duration: 0 hr 25 min Scoring: 28 points

Quiz: Measures of Spread

Take a quiz to assess your understanding of the material.

Duration: 0 hr 25 min Scoring: 26 points

LESSON 3: REVIEW OF BASIC PROBABILITY**Study: Review of Basic Probability**

Review the fundamental rules of probability as well as basic counting principles.

Duration: 0 hr 40 min

Checkup: Practice Problems

Complete a set of practice problems to hone your calculation skills.

Duration: 0 hr 25 min

Quiz: Counting Principles

Take a quiz to assess your understanding of the material.

Duration: 0 hr 25 min Scoring: 20 points

LESSON 4: ADVANCED COUNTING PRINCIPLES

Study: Advanced Counting Principles

Investigate factorials, permutations, and combinations, as well as explore their applications in games of chance.

Duration: 0 hr 40 min

Study: Games of Skill and Chance

Explore how probability concepts apply to cards, dice, and lottery games.

Duration:

0 hr 40 min

Checkup: Practice Problems

Complete a set of practice problems to hone your calculation skills.

Duration: 0 hr 25 min

Quiz: Advanced Counting Principles

Take a quiz to assess your understanding of the material.

Duration: 0 hr 25 min

Scoring: 30 points

LESSON 5: CONDITIONAL AND COMPOUND PROBABILITY**Study: Conditional and Compound Probability**

Learn general rules for union and intersection, conditional probability, compound probability, tables, tree diagrams, and Venn diagrams.

Duration: 0 hr 40 min

Checkup: Practice Problems

Complete a set of practice problems to hone your calculation skills.

Duration: 0 hr 25 min

Quiz: Conditional Probability

Take a quiz to assess your understanding of the material.

Duration: 0 hr 25 min Scoring:

24 points

Quiz: Advanced Rules of Probability

Take a quiz to assess your understanding of the material.

Duration: 0 hr 25 min

Scoring: 30 points

Quiz: Compound Probability

Take a quiz to assess your understanding of the material.

Duration: 0 hr 25 min Scoring:

30 points

LESSON 6: DATA GATHERING AND INFERENCE STATISTICS

Study: Data Gathering and Inferential Statistics

Investigate techniques for gathering data and explore how probability is used in statistical inference.

Duration: 0 hr 40 min

Checkup: Practice Problems

Complete a set of practice problems to hone your calculation skills.

Duration: 0 hr 25 min

Quiz: Data Gathering

Take a quiz to assess your understanding of the material.

Duration: 0 hr 25 min Scoring: 30 points

Quiz: Inference

Take a quiz to assess your understanding of the material.

Duration: 0 hr 25 min Scoring: 30 points

LESSON 7: RANDOM VARIABLES

Study: Random Variables

Explore random variable concepts such as discrete continuous variables, histograms, density, curves, mean, standard deviation of discrete random variables, normal curve, and z-score percentiles.

Duration: 0 hr 40

min

Checkup: Practice Problems

Complete a set of practice problems to hone your calculation skills.

Duration: 0 hr 25 min

Quiz: Random Variables

Take a quiz to assess your understanding of the material.

Duration: 0 hr 25 min Scoring: 24

points

Quiz: Normal Curves

Take a quiz to assess your understanding of the material.

Duration: 0 hr 25 min Scoring: 24 points

LESSON 8: TWO-VARIABLE DATA

Study: Two-Variable Data

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Investigate two-variable data sets through concepts such as explanatory and response variables, scatterplots, correlation, least-squares regression, and residuals.

Duration: 0 hr 40 min

Checkup: Practice Problems

Complete a set of practice problems to hone your calculation skills.

Duration: 0 hr 25 min

Quiz: Scatterplots and Correlation

Take a quiz to assess your understanding of the material.

Duration: 0 hr 25 min

Scoring: 20 points

Quiz: Least Squares Regression

Take a quiz to assess your understanding of the material.

Duration: 0 hr 25 min

Scoring: 20 points

Study: Least Squares Regression Lines

Investigate two-variable data concepts such as scatterplots, least-squares regression lines, best-fit lines, and residuals.

Duration: 0 hr 40 min

LESSON 9: EXPERIMENTAL DESIGN

Study: Experimental Design

Learn how to design and carry out an experiment employing the basic principles of experimental design.

Duration: 0 hr 40 min

Checkup: Practice Problems

Complete a set of practice problems to hone your calculation skills.

Duration: 0 hr 25 min

Quiz: Sampling and Simulation

Take a quiz to assess your understanding of the material.

Duration: 0 hr 25 min

Scoring: 26 points

Quiz: Experimental Design

Take a quiz to assess your understanding of the material.

Duration: 0 hr 25 min Scoring: 24 points

LESSON 10: WRAP-UP

Practice: Assignment

Submit your work for a set of 20 practice problems.

Duration: 0 hr 50 min Scoring: 100 points

Review: Review Exercises

Take part in interactive games to review unit material in preparation for upcoming assessments.

Duration: 1 hr

Discuss: Representing Data

Take part in a three- to seven-question discussion about applying methods learned in this unit.

Duration: 0 hr 20 min Scoring: 30 points

Test (CS): Data Analysis & Probability

Take a computer-scored test to assess what you have learned in this unit.

Duration: 0 hr 40 min Scoring: 75 points

Test (TS): Data Analysis & Probability

Take a teacher-scored test to assess what you have learned in this unit.

Duration: 0 hr 30 min Scoring: 50 points

LESSON 11: DIAGNOSTIC**Diagnostic: Data Analysis & Probability**

Take a diagnostic unit test that will generate a study plan based on your responses.

Duration: 0 hr 40 min Scoring: 25 points

UNIT 12: ALGEBRA II SEMESTER 2 REVIEW AND EXAM

LESSON 1: PREPARING FOR THE SEMESTER EXAM**Review: Semester Review**

Prepare for the semester exam by reviewing key concepts covered in Algebra II Semester 2.

Duration: 1 hr

Exam: Semester Exam

Duration: 0 hr 50 min Scoring: 216 points