Online Courses for High School Students
1-888-972-6237

Algebra I – (Credit Recovery)

A diagnostic driven credit recovery course is designed to give an expanded opportunity for students who did not succeed the first time in the course.

Students are given the opportunity in each learning unit to demonstrate their knowledge in that area of study. If they demonstrate competency in their unit assessment they will be presented with the following unit. If they do not demonstrate competency then they are required to do the entire unit.

Requirement: For a student to take a credit recovery course, they must have already taken the class unsuccessfully and have the appropriate seat time.

Course Description:
In this course, students deepen their understanding of linear and exponential relationships by contrasting them with each other. Students also apply linear models to data that exhibit a linear trend. The course also covers analyzing, solving, and using quadratic functions.

Prerequisite: Math 8 (or equivalent)
Course Length: One Semester
Required Text: Algebra 1: A Reference Guide (E-book is included within the course).
Materials List: Texas Instruments TI-84 Plus Graphics Calculator

Course Outline
Semester 1

Unit 1: Expressions and Problem Solving
Lesson Goals
- Evaluate numerical expressions involving whole-number exponents.
- Determine where to place grouping symbols in an expression to get a specified value.
- Evaluate expressions involving rational numbers, using the order of operations.

Unit 2: One-Variable Linear Equations and Inequalities
Lesson Goals
- Solve a one-step linear addition or subtraction inequality.
- Solve a one-step linear multiplication or division inequality.
- Solve a multistep linear inequality with variables on one side.

- Solve a multistep linear inequality with variables on both sides.

Unit 3: Two-Variable Linear Equations and Inequalities
Lesson Goals
- Transform the equation of a line into a given form.
- Graph the equation of a line given in standard form.
- Graph the equation of a line given in point-slope form.
- Graph the equation of a line given in slope-intercept form.
- Represent real-world situations with a linear equation in two variables.
- Write the equation of a line, given two points on the line.
- Write the equation of a line, given the slope of the line and a point on the line.
- Write the equation of a line, given the slope of the line and the y-intercept.
- Identify the form of a linear equation.

Unit 4: Working with Functions
Lesson Goals
- Sketch the graph of a linear function, given a description of the situation it represents.
- Graph a linear function, given its equation.

Unit 5: Radicals and Exponents
Lesson Goals
- Simplify expressions using properties of exponents.
- Justify the meaning of a rational exponent.
- Convert between rational exponent form and radical form.

Unit 6: Exponential Functions
Lesson Goals
- Determine ratios of outputs for an exponential function over a given interval.
- Determine whether a function is linear, exponential, or neither linear nor exponential, given a set or table of ordered pairs.
- Determine whether a situation can be modeled by a linear function or an exponential function.
- Determine differences in outputs for a linear function over a given interval.

Unit 7: Sequences and Modeling with Functions
Lesson Goals
- Write an explicit rule for a geometric sequence.
- Use an explicit rule for a geometric sequence to find a given term in the sequence.
- Write a recursive rule for a geometric sequence.
- Use a recursive rule for a geometric sequence to find a given term in the sequence.
- Write the rule for a geometric sequence that models a real-world situation.
- Convert from a recursive rule for a geometric sequence to the explicit rule.

- Convert from an explicit rule for a geometric sequence to the recursive rule.
- Solve a real-world problem by writing and using an explicit rule for a geometric sequence.
- Determine the common ratio for a geometric sequence.

Unit 8: Semester Exam

Unit 1: Systems of Equations
Lesson Goals
- Justify the linear combination method.
- Solve a system of two linear equations in two variables using the linear combination method (without multiplication).
- Solve a system of two linear equations in two variables using the linear combination method (with multiplication).

Unit 2: Polynomials
Lesson Goals
- Determine the roots of a quadratic equation by converting it to factored form.
- Determine the zeros of a quadratic function by converting it to factored form.

Unit 3: Quadratic Equations
Lesson Goals
- Derive the quadratic formula.
- Solve quadratic equations by using the quadratic formula.
- Determine whether the solutions of a quadratic equation are real or complex by evaluating the discriminant. • Describe the solutions of a quadratic equation by evaluating the discriminant.

Unit 4: Quadratic Functions
Lesson Goals
- Determine the x-intercepts of a quadratic function, given a function equation that can be factored.
- Convert a quadratic function from standard form to vertex form.
- Determine the zeros of a quadratic function by converting it to factored form.
- Determine the maximum or minimum of a quadratic function by converting it to vertex form.
- Determine the number of zeros a quadratic function has given its equation.
- Convert a quadratic function from factored form to standard form.
- Convert a quadratic function from standard form to factored form.
- Convert a quadratic function from vertex form to standard form.

Unit 5: Univariate Data
Lesson Goals
- Determine the range of a data set.

- Determine the interquartile range of a data set.
- Determine the standard deviation of a data set.

Unit 6: Bivariate Data
Lesson Goals
- Explain the difference between correlation and causation.
- Explain a likely reason two variables are correlated.

Unit 7: Algebra 1 Project
Lesson Goals
- Represent data with a histogram.
- Represent data with a box plot.
- Represent data with a frequency table.
- Determine the five-number summary of a data set.
- Interpret a histogram.
- Interpret a box plot.
- Determine a linear function equation to fit a data set.
- Interpret the slope of a linear model in the context of the data.
- Determine the correlation coefficient of a data set.
- Explain a likely reason two variables are correlated.
- Interpret a correlation coefficient.

Unit 8: Semester Exam