

Department: Math

Revised: April 2017

Mission Statement

Every student can and should learn higher level mathematics. We will provide a variety of instructional methods and relearning opportunities for students to find success.

How We Will Achieve Our Mission

- All students are expected to complete a standards aligned algebra and geometry curriculum.
- All students will be held to a high standard of learning with relearning opportunities and reassessment opportunities available to those who do not meet the standards initially.
- All students will have the opportunity to earn credit at the post-secondary level while completing high school graduation requirements.

Course: Algebra

Chapter 1

convert between verbal and algebraic expressions

evaluate numerical and algebraic expressions using the order of operations

recognize and use properties of identity and equality

use the distributive property and simplify expressions by combining like terms

solve multi-step equations

represent relations and interpret graphs of relations

determine whether a relation is a function and find function values

interpret and graph intercepts; interpret and graph positive, negative, increasing, and decreasing behavior

Chapter 2

translate from sentences into equations and vice versa

solve simple equations using addition, subtraction, division, and reciprocals

set up and solve two-step equations from word problems

solve equations with variables on both sides

solve simple equations involving absolute value

compare ratios and solve proportions

calculate percent increase and decrease and find missing values using proportions

solve literal equations and formulas for specified value

Chapter 3

graph linear equations from a table of values; find and graph the intercepts of a linear equation

use a graph to check solutions to equations; approximate solutions of real life problems using a graph

find the slope of a line or any two points using $S = \text{rise}/\text{run}$ or the slope formula

write and graph direct variation equations; solve situations and problems using direct variation

recognize , extend, and write formulas for arithmetic sequences

Chapter 4

write equations of lines in slope intercepts form

write an equation of a line given a point and the slope of two points on the line

write equations in point-slope form; write and convert linear equations in different forms

write the equation for a line through a given point which is either parallel or perpendicular to another line

determine correlation of a scatter plot; use and write equations for lines of best fit

represent relations as sets of ordered pairs, tables, mappings, and graphs; find the inverse of a relation

Chapter 5

solve, graph, and check simple linear inequalities using addition and subtraction rules

solve multi-step linear inequalities; solve linear inequalities using the distributive property; write multi-step inequalities

solve and graph compound inequalities containing the words “and” and “or”

solve inequalities involving absolute value

graph inequalities in two variables

Chapter 6

solve systems of equations by graphing; determine whether systems have 0, 1, or infinite solutions; set up systems from word problems

solve systems of equations using substitution

solve systems using algebra tiles and simple addition elimination

solve systems using multiplication and elimination

apply techniques of solving systems; apply and solve systems of equations for real life situations

solve a system of linear inequalities by graphing

Chapter 7

multiply and simplify monomials with exponents

simplify expressions with negative and zero exponents; use the divisions properties of exponents to evaluate and simplify expressions

graph exponential functions; identify data that displays exponential behavior; describe the end behavior of exponential data

solve real life situations involving exponential growth or decay

Chapter 8

add and subtract polynomials

multiply a polynomial by a monomial

multiply binomials; multiply polynomials; use operations on polynomials to represent a shaded region

multiply sums and differences and also square binomials

find the greatest common factor of polynomials; factor polynomials using reverse distributive property and grouping

solve equations using zero product property; factor trinomials in $x^2 + bx + c$; factor simple trinomials involving negative terms

factor trinomials of the form $ax^2 + bx + c$

factor a difference of squares; use various factoring techniques together