7TH		
Domain	standard	Definition
ratios and proporitinal relationsips	RP.A.2.A	Decide whether two quantities are in a proportional relationship, e.g., by testing for equivalent ratios in a table or graphing on a coordinate plane and observing whether the graph is a straight line through the origin.
	RP.A.2.B	Identify the constant of proportionality (unit rate) in tables, graphs, equations, diagrams, and verbal descriptions of proportional relationships.
	RP. A. 2.C.	Represent proportional relationships by equations. For example, if total cost t is proportional to the number n of items purchased at a constant price p, the relationship between the total cost and the number of items can be expressed as t=pn.
	RP. A.2.D.	Explain what a point (x,y) on the graph of a proportional relationship means in terms of the situation, with special attention to the points (0,0) and (1,r) where r is the unit rate.
	RP. A.. 3	Use proportional relationships to solve multistep ratio and percent problems. Examples: simple interest, tax, markups and markdowns, gratuities and commissions, fees, percent increase and decrease, percent error.
THE NUMBER SYSTEM	NS.A.1.B	Understand p+q as the number located a distance |q| from p, in the positive or negative direction depending on whether q is positive or negative. Show that a number and its opposite have a sum of 0 (are additive inverses). Interpret sums of rational numbers by describing real-world contexts.
	NS.A.1.C	Understand subtraction of rational numbers as adding the additive inverse, p−q=p+(−q). Show that the distance between two rational numbers on the number line is the absolute value of their difference, and apply this principle in real-world contexts.
	NS.A.1.D	Apply properties of operations as strategies to add and subtract rational numbers.
	NS.A.2.A	Understand that multiplication is extended from fractions to rational numbers by requiring that operations continue to satisfy the properties of operations, particularly the distributive property, leading to products such as (−1)(−1)=1 and the rules for multiplying signed numbers. Interpret products of rational numbers by describing real-world contexts.
	NS.A.2.B	Understand that integers can be divided, provided that the divisor is not zero, and every quotient of integers (with non-zero divisor) is a rational number. If p and q are integers, then −(p/q)=(−p)/q=p/(−q). Interpret quotients of rational numbers by describing real-world contexts.

	NS.A.2.C	Apply properties of operations as strategies to multiply and divide rational numbers.
	NS.A.2.D	Convert a rational number to a decimal using long division; know that the decimal form of a rational number terminates in 0s or eventually repeats.
EXPRESSIONS AND EQUATIONS	EE.A.1	Apply properties of operations as strategies to add, subtract, factor, and expand linear expressions with rational coefficients.
8TH		
	EE.B.5	raph proportional relationships, interpreting the unit rate as the slope of the graph. Compare two different proportional relationships represented in different ways. For example, compare a distance-time graph to a distance-time equation to determine which of two moving objects has greater speed.
	EE.B.6	Solve real-world and mathematical problems by writing and solving equations of the form x+p=q and px=q for cases in which p, q and x are all nonnegative rational numbers.
	EE.C.7.A	Give examples of linear equations in one variable with one solution, infinitely many solutions, or no solutions. Show which of these possibilities is the case by successively transforming the given equation into simpler forms, until an equivalent equation of the form x=a, a=a, or a=b results (where a and b are different numbers).
	EE.C.7.B	Solve linear equations with rational number coefficients, including equations whose solutions require expanding expressions using the distributive property and collecting like terms.
	EE.C.8.C	Analyze and solve linear equations and pairs of simultaneous linear equations.
ExpreSSIONS AND EQUATIONS	EE.C.8.B	Understand the connections between proportional relationships, lines, and linear equations.
	F.IF.A.1	Understand that a function is a rule that assigns to each input exactly one output. The graph of a function is the set of ordered pairs consisting of an input and the corresponding output.
	F.A.2	Compare properties of two functions each represented in a different way (algebraically, graphically, numerically in tables, or by verbal descriptions). For example, given a linear function represented by a table of values and a linear function represented by an algebraic expression, determine which function has the greater rate of change.
	F.A.3	Interpret the equation y=mx+b as defining a linear function, whose graph is a straight line; give examples of functions that are not linear. For example, the function A=s2 giving the area of a square as a function of its side length is not linear because its graph contains the points (1,1), (2,4) and (3,9), which are not on a straight line.

	F.B.4	Construct a function to model a linear relationship between two quantities. Determine the rate of change and initial value of the function from a description of a relationship or from two (x,y) values, including reading these from a table or from a graph. Interpret the rate of change and initial value of a linear function in terms of the situation it models, and in terms of its graph or a table of values.
	F.B.5	Describe qualitatively the functional relationship between two quantities by analyzing a graph (e.g., where the function is increasing or decreasing, linear or nonlinear). Sketch a graph that exhibits the qualitative features of a function that has been described verbally.
functions	G.A.1	Verify experimentally the properties of rotations, reflections, and translations:
	G.A.1.A	Lines are taken to lines, and line segments to line segments of the same length.
	G.A.1.B	Angles are taken to angles of the same measure.
	G.A.2	Parallel lines are taken to parallel lines.
	G.B.7	Apply the Pythagorean Theorem to determine unknown side lengths in right triangles in real-world and mathematical problems in two and three dimensions.
Geometry	G.B.8	Apply the Pythagorean Theorem to find the distance between two points in a coordinate system.
Math I	A.CED.A.1	Create equations and inequalities in one variable and use them to solve problems. Include equations arising from linear and quadratic functions, and simple rational and exponential functions.
	A.CED.A.2	Create equations and inequalities in one variable and use them to solve problems. Include equations arising from linear and quadratic functions, and simple rational and exponential functions.
	A.REI.D.10	Understand that the graph of an equation in two variables is the set of all its solutions plotted in the coordinate plane, often forming a curve (which could be a line).
	A.REI.D.11	Explain why the x-coordinates of the points where the graphs of the equations y=f(x) and y=g(x) intersect are the solutions of the equation f(x)=g(x); find the solutions approximately, e.g., using technology to graph the functions, make tables of values, or find successive approximations. Include cases where f(x) and/or g(x) are linear, polynomial, rational, absolute value, exponential, and logarithmic functions.
	A.REI.D.12	Graph the solutions to a linear inequality in two variables as a half-plane (excluding the boundary in the case of a strict inequality), and graph the solution set to a system of linear inequalities in two variables as the intersection of the corresponding half-planes.

	F.IF.A.1	Understand that a function from one set (called the domain) to another set (called the range) assigns to each element of the domain exactly one element of the range. If f is a function and x is an element of its domain, then f(x) denotes the output of f corresponding to the input x. The graph of f is the graph of the equation y=f(x).
	F.IF.B.4	For a function that models a relationship between two quantities, interpret key features of graphs and tables in terms of the quantities, and sketch graphs showing key features given a verbal description of the relationship. Key features include: intercepts; intervals where the function is increasing, decreasing, positive, or negative; relative maximums and minimums; symmetries; end behavior; and periodicity.
	F.IF.B.5	Relate the domain of a function to its graph and, where applicable, to the quantitative relationship it describes. For example, if the function h(n) gives the number of person-hours it takes to assemble n engines in a factory, then the positive integers would be an appropriate domain for the function.
	F.IF.B.6	Calculate and interpret the average rate of change of a function (presented symbolically or as a table) over a specified interval. Estimate the rate of change from a graph.
	F.IF.C.7.A	Graph linear and quadratic functions and show intercepts, maxima, and minima.
	F.IF.C.7.E	Graph exponential and logarithmic functions, showing intercepts and end behavior, and trigonometric functions, showing period, midline, and amplitude.
	F.BF.A.1.A	Write a function that describes a relationship between two quantities.Determine an explicit expression, a recursive process, or steps for calculation from a context.
	F.BF.A.2	Write arithmetic and geometric sequences both recursively and with an explicit formula, use them to model situations, and translate between the two forms.
	A.REI.B.3	Solve linear equations and inequalities in one variable, including equations with coefficients represented by letters.
Math 2	A.APR.A.1	Understand that polynomials form a system analogous to the integers, namely, they are closed under the operations of addition, subtraction, and multiplication; add, subtract, and multiply polynomials.

	F.IF.B.4	For a function that models a relationship between two quantities, interpret key features of graphs and tables in terms of the quantities, and sketch graphs showing key features given a verbal description of the relationship. Key features include: intercepts; intervals where the function is increasing, decreasing, positive, or negative; relative maximums and minimums; symmetries; end behavior; and periodicity.
	F.IF.B.5	Relate the domain of a function to its graph and, where applicable, to the quantitative relationship it describes. For example, if the function h(n) gives the number of person-hours it takes to assemble n engines in a factory, then the positive integers would be an appropriate domain for the function.
	F.IF.B.6	Calculate and interpret the average rate of change of a function (presented symbolically or as a table) over a specified interval. Estimate the rate of change from a graph.
	F.IF.C.7.A	Graph linear and quadratic functions and show intercepts, maxima, and minima.
	F.IF.C.7.B	Graph square root, cube root, and piecewise-defined functions, including step functions and absolute value functions.
	F.IF.C.8.A	Use the process of factoring and completing the square in a quadratic function to show zeros, extreme values, and symmetry of the graph, and interpret these in terms of a context.
	F.IF.C.8.B	Use the properties of exponents to interpret expressions for exponential functions. For example, identify percent rate of change in functions such as y=(1.02)t, y=(0.97)t, y=(1.01)12t, y=(1.2)t/10, and classify them as representing exponential growth or decay.
	F.IF.C.9	Compare properties of two functions each represented in a different way (algebraically, graphically, numerically in tables, or by verbal descriptions). For example, given a graph of one quadratic function and an algebraic expression for another, say which has the larger maximum.
	F.BF.A.1.A	Determine an explicit expression, a recursive process, or steps for calculation from a context.
	A.SSE.A.2	Use the structure of an expression to identify ways to rewrite it. For example, see x4−y4 as (x2)2−(y2)2, thus recognizing it as a difference of squares that can be factored as (x2−y2)(x2+y2).
	A.SSE.B.3.A	Factor a quadratic expression to reveal the zeros of the function it defines
	A.SSE.B.3.B	Complete the square in a quadratic expression to reveal the maximum or minimum value of the function it defines.

	A.SSE.B.3.C	Use the properties of exponents to transform expressions for exponential functions. For example the expression 1.15t can be rewritten as (1.151/12) 12t≈1.01212t to reveal the approximate equivalent monthly interest rate if the annual rate is 15%.
	A.CED.A.1	Create equations and inequalities in one variable and use them to solve problems. Include equations arising from linear and quadratic functions, and simple rational and exponential functions.
	A.CED.A.2	Create equations in two or more variables to represent relationships between quantities; graph equations on coordinate axes with labels and scales.
	A.REI.B.4	Solve quadratic equations in one variable.
	A.REI.B.4.A	Use the method of completing the square to transform any quadratic equation in x into an equation of the form (x−p)2=q that has the same solutions. Derive the quadratic formula from this form.
	A.REI.B.4.B	Solve quadratic equations by inspection (e.g., for x2=49), taking square roots, completing the square, the quadratic formula and factoring, as appropriate to the initial form of the equation. Recognize when the quadratic formula gives complex solutions and write them as a±bi for real numbers a and b.
	N.CN.C.7	Solve quadratic equations with real coefficients that have complex solutions.