

Units:

[Rational & Irrational Numbers](#Bookmark1)

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In this document, you will find the key words and their associated definitions for **Algebra 1 A base course**.

\*Spanish versions of each glossary can be found in the [glossaries](https://www.connexus.com/library/default.aspx?lineage=%2fHome%2fInstructional+Partners%2fCompanion+Site+Resources%2fMath%2fAlgebra+1%2fGlossaries%2f&category=Glossaries&mode=manage) folder. These versions are split up by unit and include both English and Spanish versions of the glossary.

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| ***Rational & Irrational Numbers*** |
| Lesson 2 | **Closure Property** – the sum or product of any two numbers from the same subset of numbers will result in a number from the same subset**integer** – any of the natural numbers, the negatives of these numbers, or zero**irrational number** – a number that can be expressed as an infinite decimal with no set of consecutive digits repeating and that cannot be expressed as the quotient of two integers**rational number** – a number that can be expressed as an integer or the quotient of an integer divided by a nonzero integer**real number** – a number that has no imaginary part |
| Lesson 3 | **Closure Property** – the sum or product of any two numbers from the same subset of numbers will result in a number from the same subset**irrational number** – a number that can be expressed as an infinite decimal with no set of consecutive digits repeating and that cannot be expressed as the quotient of two integers**rational number** – a number that can be expressed as an integer or the quotient of an integer divided by a nonzero integer |
| Lesson 4 | **base** – a number that is raised to a power**exponent** – a symbol written above and to the right of a mathematical expression to indicate the operation of raising to a power**factor** – any of the numbers or symbols in mathematics that when multiplied together form a product**index** – the number written at the top left of the radical sign **radical** – a mathematical expression indicating a root by means of a radical sign (√)**radicand** – the quantity under a radical sign**root** – a quantity taken an indicated number of times as an equal factor |
| Lesson 5 | **equivalent** – equal in force, amount, or value; having the same solution set (equivalent equations)**expression** – numbers, symbols and operators grouped together that show the value of something**index** – the number written at the top left of the radical sign **rational number** – a number that can be expressed as an integer or the quotient of an integer divided by a nonzero integer**solution** – a set of values of the variables that satisfies an equation; for an equation with one variable, a value (number) that, when substituted in for the variable, makes a true statement**variable** – a quantity that may assume any one of a set of values, typically represented by a letter |
| Lesson 6 | **equation** – a usually formal statement of the equality or equivalence of mathematical or logical expressions**equivalent** – equal in force, amount, or value; having the same solution set (equivalent equations)**expression** – numbers, symbols and operators grouped together that show the value of something**radical** – a mathematical expression indicating a root by means of a radical sign (√)**radicand** – the quantity under a radical sign**root** – a quantity taken an indicated number of times as an equal factor |

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| ***Structures of Expressions*** |
| Lesson 2 | **coefficient** – a number used to multiply a variable**constant** – a quantity having a fixed value that does not change or vary, such as a number**equation** – a usually formal statement of the equality or equivalence of mathematical or logical expressions**expression** – numbers, symbols and operators grouped together that show the value of something**factor**  – any of the numbers or symbols in mathematics that, when multiplied together, form a product**term** – is either a single number or variable, or numbers and variables multiplied together**variable** – a quantity that may assume any one of a set of values, typically represented by a letter |
| Lesson 3 | **brace** – one of two marks {} used to connect words or items to be considered together**bracket** – one of a pair of marks [ ] used in writing and printing to enclose matter or in mathematics and logic as signs of aggregation**equation** – a usually formal statement of the equality or equivalence of mathematical or logical expressions**expression** – numbers, symbols and operators grouped together that show the value of something**parenthesis** – one or both of the curved marks () used in writing and printing to enclose a parenthetical expression or to group a symbolic unit in a logical or mathematical expression |
| Lesson 4 | **Associative Property** – a rule stating that the way factors are grouped in an addition problem or in a multiplication problem has no effect on the product**equivalent** – equal in force, amount, or value; having the same solution set (equivalent equations)**expression** – numbers, symbols and operators grouped together that show the value of something |
| Lesson 5 | **binomial** – an algebraic expression with two terms**Distributive Property** – a property of algebra that states that multiplying the sum of two or more addends by a number will give the same result as multiplying each addend individually by the number and then adding the products together; $a(b+c)=ab+ac$**equivalent** – equal in force, amount, or value; having the same solution set (equivalent equations)**factor** – any of the numbers or symbols in mathematics that, when multiplied together, form a product**polynomial** – an algebraic expression composed of variables, constants, coefficients, operators (such as addition and subtraction), and whole number exponents |
| Lesson 6 | **closed system** – an operation that when performed on members of a set produce another member of the same set**coefficient** – a number used to multiply a variable**Commutative Property of Addition** – the property of operations which states that changing the order in which you add numbers does not change the sum; $a+b=b+a$**Distributive Property** – a property of algebra that states that multiplying the sum of two or more addends by a number will give the same result as multiplying each addend individually by the number and then adding the products together; $a(b+c)=ab+ac$**expression** – numbers, symbols and operators grouped together that show the value of something**like term** – a term whose variables and exponents are the same as those of another term**polynomial** – an algebraic expression composed of variables, constants, coefficients, operators (such as addition and subtraction), and whole number exponents**term** – is either a single number or variable, or numbers and variables multiplied together |
| Lesson 7 | **base** – a number (such as $5$ in $5^{6.44 }$or $5^{7}$) that is raised to a power**binomial** – an algebraic expression with two terms**closed system** – an operation that when performed on members of a set produce another member of the same set**coefficient** – a number used to multiply a variable**Distributive Property** – a property of algebra that states that multiplying the sum of two or more addends by a number will give the same result as multiplying each addend individually by the number and then adding the products together; $a(b+c)=ab+ac$**exponent** – a symbol written above and to the right of a mathematical expression to indicate the operation of raising to a power; represents the number of times a base value is multiplied by itself, and simplifies repeated multiplication by expressing it as a shorter mathematical notation**like term** – a term whose variables and exponents are the same as those of another term**monomial** – a mathematical expression consisting of a single term**polynomial** – an algebraic expression composed of variables, constants, coefficients, operators (such as addition and subtraction), and whole number exponents**set** – a collection of elements, especially mathematical ones (such as numbers or points)**trinomial** – a mathematical expression consisting of three terms |

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| ***1-Variable Equations & Inequalities*** |
| Lesson 2 | **equation** – a usually formal statement of equality or equivalence in a mathematical expression**expression** – numbers, symbols and operators grouped together that show the value of something**inequality** – a statement of inequality between two quantities usually separated by a sign of inequality, such as < (is less than); > (is greater than); or ≠ (is not equal to)**simplify** – to perform all math operations possible until no more can be completed**statement** – a mathematical sentence that is either true or false**variable** – a quantity that may assume any one of a set of values, typically represented by a letter |
| Lesson 3 | **compound inequality** – two inequalities joined by the word “and” or the word “or”**empty set** – a set that does not contain any elements**equation** – a usually formal statement of the equality or equivalence of mathematical or logical expressions**inequality** – a statement of inequality between two quantities usually separated by a sign of inequality, such as < (is less than); > (is greater than); or ≠ (is not equal to)**set notation**– the designation of a set, using braces {} to identify the solution or solutions to equations and inequalities**solution set** – the set of values that satisfy an equation**variable** – a letter used to represent an unknown quantity |
| Lesson 4 | **Addition Property of Equality** – a rule stating that adding the same number to both sides of an equation produces an equivalent equation**Division Property of Equality** – a rule stating that dividing both sides of an equation by the same nonzero number produces an equivalent equation**equation** – a usually formal statement of the equality or equivalence of mathematical or logical expressions**identity** – a state of equality for all values of the variables between the left-hand side and the right-hand side of an equation**inverse operations** – a pair of mathematical operations, such as addition and subtraction, that undo one another**linear equation** – an equation containing a variable raised to the power of 1; an equation in the form $ax+b=0 $where $a\ne 0$**Multiplication Property of Equality** – a rule stating that multiplying both sides of an equation by the same number produces an equivalent equation**solution** – a set of values of the variables that satisfies an equation; for an equation with one variable, a value (number) that, when substituted in for the variable, makes a true statement**solution set** – the set of values that satisfy an equation**Subtraction Property of Equality** – a rule stating that subtracting the same number from both sides of an equation produces an equivalent equation**variable** – a quantity that may assume any one of a set of values, typically represented by a letter |
| Lesson 5 | **Addition Property of Inequality** – a rule stating that adding the same number to both sides of an inequality produces an equivalent inequality**Division Property of Inequality** – a rule stating that dividing both sides of an inequality by the same positive number produces an equivalent inequality**inequality** – a statement of inequality between two quantities usually separated by a sign of inequality, such as < (is less than); > (is greater than); or ≠ (is not equal to)**linear inequality** – an expression in which two linear expressions are compared using the inequality symbols (>, <, ≥, ≤, ≠)**Multiplication Property of Inequality** – a rule stating that multiplying both sides of an equality by the same positive number produces an equivalent inequality**Subtraction Property of Inequality** – a rule stating that subtracting the same number from both sides of an inequality produces an equivalent inequality |
| Lesson 6 | **compound inequality** – a pair of two or more inequalities joined with the words “and” or “or”**inequality** – a statement of inequality between two quantities usually separated by a sign of inequality, such as < (is less than); > (is greater than); or ≠ (is not equal to)**intersection of two sets** – the set of elements common to both sets**union of two sets** – the set of elements that are in either or both of the original sets |
| Lesson 7 | **undefined** – an expression that has no meaning**variable** – a quantity that may assume any one of a set of values, typically represented by a letter |
| Lesson 8 | **inverse operations** – a pair of mathematical operations, such as addition and subtraction, that undo one another**quantity of interest** – the variable that the equation is equal to**term** – is either a single number or variable, or numbers and variables multiplied together**unit** – a determinate quantity (as of length, time, heat, or value) adopted as a standard of measurement |
| Lesson 9 | **constraint** – a restriction or limitation that is placed on variables used in equations that use real-world situations**equation** – a usually formal statement of the equality or equivalence of mathematical or logical expressions**inequality** – a statement of inequality between two quantities usually separated by a sign of inequality, such as < (is less than); >(is greater than); or ≠ (not equal to)**nonviable** – a result not possible as a solution to the problem with constraints**solution** – a set of values of the variables that satisfies an equation; for an equation with one variable, a value (number) that, when substituted in for the variable, makes a true statement**solve** – to find a solution, explanation, or answer for**variable** – a quantity that may assume any one of a set of values, typically represented by a letter**viable** – a result is possible as a solution to a problem with constraints |

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| ***Quadratic Equations*** |
| Lesson 2 | **equation** – a usually formal statement of the equality or equivalence of mathematical or logical expressions; a statement that two expressions are equivalent (have equal value)**evaluate** – to determine or fix the value of**quadratic equation** – any equation containing one term in which the unknown is squared and no term in which the unknown is raised to a higher power**satisfy** – to make true by fulfilling a condition**solution** – a value (number), that when substituted in for the variable of an equation, makes a true statement**solution set** – the set of values that satisfy an equation**squared** – raised to the second power, that is, multiplied by itself**substitute** – to put or use in the place of another |
| Lesson 3 | **equation** – a usually formal statement of the equality or equivalence of mathematical or logical expressions; a statement that two expressions are equivalent (have equal value)**inspection** – recognition of a familiar pattern leading to immediate solution of a mathematical problem**inverse operation** – an operation (such as subtraction) that undoes the effect of another operation (such as addition); also known as an inverse function**perfect square** – a number obtained from squaring an integer (multiply a number by itself)**quadratic equation** – any equation containing one term in which the unknown is squared and no term in which the unknown is raised to a higher power**radical sign** – the sign √ placed before an expression to denote that the square root is to be extracted or that the root marked by an index (as in √3 for the cube root) is to be extracted**satisfy** – to make true by fulfilling a condition**set** – a collection of elements and especially mathematical ones (such as numbers or points)**solution** – a set of values of the variables that satisfies an equation; for an equation with one variable, a value (number) that, when substituted in for the variable, makes a true statement**solution set** – the set of values that satisfy an equation**square root** – a factor of a number that when squared gives the number; for example, the square root of 9 is ±3**squared** – raised to the second power, that is, multiplied by itself |
| Lesson 4 | **factor** – any of the numbers or symbols in mathematics that when multiplied together form a product; to find the mathematical factors and especially the prime mathematical factors**factored form** – a form in which a quadratic equation is expressed as a product of two algebraic expressions**factored form of a quadratic equation** – a form in which a quadratic equation is expressed as a product of two algebraic expressions**product** – the number or expression resulting from the multiplying together two or more numbers or expressions**quadratic equation** – any equation containing one term in which the unknown is squared and no term in which the unknown is raised to a higher power**root** – a quantity taken an indicated number of times as an equal factor**solution** – a set of values of the variables that satisfies an equation; for an equation with one variable, a value (number) that, when substituted in for the variable, makes a true statement**solution set** – the set of values that satisfy an equation**solve** – to find a solution, explanation, or answer for**Zero Product Property** – a property stating that if the product of two expressions or quantities is equal to zero, then at least one of the expressions or quantities is equal to zero |
| Lesson 5 | **binomial** – an algebraic expression with two terms**coefficient** – a number used to multiply a variable**constant** – a quantity having a fixed value that does not change or vary, such as a number**factor** – any of the numbers or symbols in mathematics that when multiplied together form a product; to find the mathematical factors and especially the prime mathematical factors**factored form of a quadratic equation** – a form in which a quadratic equation is expressed as a product of two algebraic expressions**greatest common factor (GCF)** – the largest factor that can be divided from all terms of an expression**monomial** – a mathematical expression consisting of a single term**quadratic equation** – any equation containing one term in which the unknown is squared and no term in which the unknown is raised to a higher power**shared binomial** – an expression that repeats after the greatest common factor has been divided out**standard form of a quadratic equation** – a form in which a quadratic equation is written as $ax^{2}+bx+c=0$, where $a\ne 0$**term** – is either a single number or variable, or numbers and variables multiplied together**Zero Product Property** – a property stating that if the product of two expressions or quantities is equal to zero, then at least one of the expressions or quantities is equal to zero |
| Lesson 6 | **binomial** – an algebraic expression with two terms**difference of two squares** – the square of a number or expression minus the square of another number or expression; follows the form $x^{2}-y^{2}$**factored form of a quadratic equation** – a form in which a quadratic equation is expressed as a product of two algebraic expressions**linear equation** – an equation containing a variable raised to the power of 1; an equation in the form $ax+b=0 $where $a\ne 0$**perfect square** – a number obtained from squaring an integer (multiply a number by itself)**perfect square trinomial** – a trinomial that can be written as a square of a binomial**quadratic trinomial** – a trinomial that can be written in the form $ax^{2}+bx+c$, where $a\ne 0$**standard form of a quadratic equation** – a form in which a quadratic equation is written as $ax^{2}+bx+c=0$, where $a\ne 0$**sum-product pattern** – a factoring method for a quadratic expression written in standard form with$ a=1$, in which factors need to be found for the constant term, c, whose sum is the coefficient of the middle term, b**trinomial** – an algebraic expression with three terms |
| Lesson 7 | **completing the square** – the process of making an expression a perfect square trinomial**formula** – an equation that describes how two or more quantities are related**literal equation** – an equation that contains two or more variables**perfect square trinomial** – a trinomial that can be written as a square of a binomial**quadratic equation** – any equation containing one term in which the unknown is squared and no term in which the unknown is raised to a higher power**quadratic formula** – a formula that gives the solutions of a quadratic equation expressed in standard form, $ax^{2}+bx+c=0$, and that is written in the form $x=(-b\pm √b^{2}4ac)/2a^{}$ |
| Lesson 8 | **axis of symmetry of a parabola** – the straight line that divides a parabola into two identical parts**parabola** – a curve where any point is equidistant from a fixed point (the focus) and a fixed straight line (the directrix); the focus may not lie on the directrix**quadratic equation** – any equation containing one term in which the unknown is squared and no term in which the unknown is raised to a higher power**vertex of a parabola** – the highest or lowest point of a parabola that crosses its axis of symmetry**y-intercept of a parabola** – the point where a parabola intersects the y-axis**zeros of a parabola** – the points where a parabola intersects the x-axis; the x-values that make the quadratic equation equal to zero |
| Lesson 9 | **axis of symmetry of a parabola** – the straight line that divides a parabola into two identical parts**completing the square** – the process of making an expression a perfect square trinomial**perfect square trinomial** – a trinomial that can be written as a square of a binomial**vertex of a parabola** – the highest or lowest point of a parabola that crosses its axis of symmetry**x-intercepts of a parabola** – the points where a parabola intersects the x-axis; the x-values that make the quadratic equation equal to zero; also call zeroes**y-intercept of a parabola** – the point where a parabola intersects the y-axis**zeros of a parabola** – the points where a parabola intersects the x-axis; the x-values that make the quadratic equation equal to zero**zeros of a quadratic equation** – the x-values that make the quadratic equation equal to zero |

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| ***2-Variable Equations & Inequalities*** |
| Lesson 2 | **equation** – a usually formal statement of the equality or equivalence of mathematical or logical expressions**ordered pair** – two values written in a specific order, where x is the first value and y is the second value to be substituted for the variables in an equation; written as (x, y)**solution** – a set of values of the variables that satisfies an equation; for an equation with one variable, a value (number) that, when substituted in for the variable, makes a true statement**solution set** – the set of values that satisfy an equation**variable** – a quantity that may assume any one of a set of values, typically represented by a letter |
| Lesson 3 | **constant** – a quantity having a fixed value that does not change or vary, such as a number**continuous data** – a kind of data that is measured on an infinite scale between points, no matter how small an increment**dependent variable** – a mathematical variable (often represented by y) whose value is determined by one or more other variables in a function**discrete data** – a numerical type of data that includes whole, concrete numbers with specific and fixed data values determined by counting**domain** – is the set of all possible inputs (x-values) of a function**independent variable** – a mathematical variable (often represented by x) that is independent of the other variables in an expression or function and whose value determines one or more of the values of the other variables**inequality** – a statement of inequality between two quantities that are separated by a sign of inequality, such as < (is less than), > (is greater than), or ≠ (is not equal to)**rate of change (slope)** – a value that results from dividing the change in a function of a variable by the change in the variable**range** – is the set of all outputs (y-values) of a function**x-intercept** – the x-coordinate of a point where a line, curve, or surface intersects the x-axis**y-intercept** – the y-coordinate of a point where a line, curve, or surface intersects the y-axis |
| Lesson 4 | **inequality** – a statement of inequality between two quantities that are separated by a sign of inequality, such as < (is less than), > (is greater than), or ≠ (is not equal to)**strict inequality** – an inequality for which adding “or equal to” to “less than” or “greater than” signs can never give a true expression |
| Lesson 5 | **parallel line** – a straight line that always remains the same distance from another line and, therefore, never intersects it**quadratic equation** – any equation containing one term in which the unknown is squared and no term in which it is raised to a higher power**system of equations** – two or more linear equations with the same variables |
| Lesson 6 | **substitution** – to replace a term with another term or expression**system of equations** – two or more linear equations with the same variables |
| Lesson 7 | **elimination method** – to remove a variable from consideration**equivalent systems** - systems of equations that have the same solution**system of equations** – two or more linear equations with the same variables |
| Lesson 8 | **inequality** – a statement of inequality between two quantities that are separated by a sign of inequality, such as < (is less than), > (is greater than), or ≠ (is not equal to)**linear inequality** – expression in which two linear expressions are compared using the inequality symbols (>, <, ≥, ≤, ≠)**strict inequality** – an inequality for which adding “or equal to” to “less than” or “greater than” signs can never give a true expression**system of inequalities** – a set of two or more inequalities with the same variables, where the inequalities define conditions to be considered simultaneously |

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| ***Functions & Their Graphs*** |
| Lesson 2 | **domain** – the set of all possible inputs (x-values) of a function**equation** – a rule of correspondence between two quantities**function** – an expression, rule, or law that defines a relationship between the independent variable and the dependent variable**graph** – a visual diagram that shows the relationship between two quantities**mapping diagram** – a visual display that uses lines or arrows to show how an input value is paired with its corresponding output value**ordered pair** – two values written in a specific order, where x is the first value and y is the second value to be substituted for the variables in an equation; written as (x,y)**range** – the set of all outputs (y-values) of a function**relation** – a correspondence between two quantities**Vertical Line Test** – an evaluation used to determine whether a relation represented by a graph is a function by drawing vertical lines across the graph; if any of these vertical lines intersect the graph more than once, then the graph is not a function |
| Lesson 4 | **dependent variable** – a mathematical variable (often represented by y) whose value is determined by one or more other variables in a function**evaluating a function** – the process of finding an output that corresponds to a given input**function notation** – a way to express the functional relationship between independent and dependent variables through symbols and is denoted as $y = f(x)$ with x as the input value**independent variable** – a mathematical variable (often represented by x) that is independent of the other variables in an expression or function and whose value determines one or more of the values of the other variables |
| Lesson 5 | **domain** – the set of all possible inputs (x-values) of a function**function** – an expression, rule, or law that defines a relationship between the independent variable and the dependent variable**graph** – a visual diagram that shows the relationship between two quantities**input-output table** – a table that shows the correspondence between the input and output of a function**range** – the set of all outputs (y-values) of a function**relation** – a correspondence between two quantities**Vertical Line Test** – an evaluation used to determine whether a relation represented by a graph is a function by drawing vertical lines across the graph; if any of these vertical lines intersect the graph more than once, then the graph is not a function |
| Lesson 6 | **dependent variable** – a mathematical variable (often represented by y) whose value is determined by one or more other variables in a function**function** – an expression, rule, or law that defines a relationship between the independent variable and the dependent variable**independent variable** – a mathematical variable (often represented by x) that is independent of the other variables in an expression or function and whose value determines one or more of the values of the other variables**linear function** – a function that represents a straight line on the graph where x’s do not repeat**origin** – a starting point on the coordinate plane (0,0), the point of intersection of the x and y axis**quantities** – the values of variables, independent (x) and dependent (y), that are used in tables and in plotting graphs**scale** – the distance between each square on the coordinate plane**slope** – the steepness of a line, found by dividing the change in the y-value by the change in the x-value**slope-intercept form** – the equation that represents linear relationships ($y=mx+b$), where m is the slope and b is the y-intercept**y-intercept** – the y-coordinate of a point where a line, curve, or surface intersects the y-axis |
| Lesson 7 | **absolute value function** – a function that contains an algebraic expression and the use of absolute value bars**dependent variable** – a mathematical variable (often represented by y) whose value is determined by one or more other variables in a function**domain** – the set of all possible inputs (x-values) of a function**independent variable** – a mathematical variable (often represented by x) that is independent of the other variables in an expression or function and whose value determines one or more of the values of the other variables**interval** – a set of real numbers between two numbers either including or excluding one or both of them**linear function** – a function that represents a straight line on the graph where x’s do not repeat**piecewise function** – a group of two or more functions broken up into specific intervals over the domain**piecewise linear function** – a function which uses a combination of linear equations over the intervals of its domain**restricted function** – a mathematical expression, usually an interval, which limits the domain of a given function**step-function** – a mathematical function of a single real variable that remains constant within each of a series of adjacent intervals but changes in value from one interval to the next |
| Lesson 8 | **depreciation** – a decrease in the value of an item over time**domain** – the set of all possible inputs (x-values) of a function**exponential function** – a function in the form $f(x)=a(b)x$, where a is the initial value and b is the multiplier**range** – the set of all outputs (y-values) of a function |
| Lesson 9 | **axis of symmetry of a parabola** – the straight line that divides a parabola into two identical parts**domain** – the set of all possible inputs (x-values) of a function**parabola** – a curve where any point is equidistant from a fixed point (the focus) and a fixed straight line (the directrix); the focus may not lie on the directrix**quadratic equation** – any equation containing one term in which the unknown is squared and no term in which it is raised to a higher power**quadratic formula** – a formula that gives the solutions of a quadratic equation expressed in standard form, $ax^{2}+bx+c=0$, and that is written in the form $x=(-b\pm √b^{2}4ac)/2a^{}$**range** – the set of all outputs (y-values) of a function**vertex of a parabola** – the highest or lowest point of a parabola that crosses its axis of symmetry**x-intercepts of a parabola** – the points where a parabola intersects the x-axis**y-intercept of a parabola** – the point where a parabola intersects the y-axis; the x-values that make the quadratic equation equal to zero; also call zeroes |

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| ***Linear & Exponential Sequences*** |
| Lesson 2 | **arithmetic sequence** – an ordered list of terms in which the difference between any two consecutive terms remains constant**common difference** – in an arithmetic sequence, the value of the difference between any two consecutive terms**common ratio** – in a geometric sequence, the value of the ratio between any two consecutive terms**domain** – the set of all possible inputs (x-values) of a function**function** – an expression, rule, or law that defines a relationship between the independent variable and the dependent variable**geometric sequence** – an ordered list of terms in which the ratio between any two consecutive terms remains constant**index** – a natural (counting) number that indicates the position of a term in a sequence, starting with 1 or 0**notation** – a system of characters, symbols, or abbreviated expressions used in art, science, mathematics, or logic to express technical facts or quantities**quadratic sequence** – a sequence in which the terms are the output of a quadratic expression, that is, in which the index is raised to the second power and no higher**range** – the set of all outputs (y-values) of a function**recursion** – the determination of a succession of elements (such as numbers or functions) by operation on one or more preceding elements according to a rule or formula involving a finite number of steps**recursive formula** – a formula expressing any term of a sequence as a function of one or more preceding terms**sequence** – a set of numbers that follow a specific pattern or formula**subscript** – a distinguishing symbol (such as a letter or numeral) written immediately below or below and to the right or left of another character**term** – is either a single number or variable, or numbers and variables multiplied together; can be used to refer to the individual items in a sequence of values |
| Lesson 3 | **arithmetic sequence** – an ordered list of terms in which the difference between any two consecutive terms remains constant**explicit formula** – a formula to determine the nth term of different types of sequences (e.g., $a\_{n}=a+(n-1)d$)**geometric sequence** – an ordered list of terms in which the ratio between any two consecutive terms remains constant**recursive formula** – a formula expressing any term of a sequence as a function of one or more preceding terms |
| Lesson 4 | **arithmetic sequence** – an ordered list of terms in which the difference between any two consecutive terms remains constant**coordinate grid** – a series of consistent increments where the vertical and horizontal lines intersect**explicit formula** – a formula to determine the nth term of different types of sequences (e.g., $a\_{n}=a+(n-1)d$)**linear function** – an equation of the form $f(x)=mx+b$, in which the variables appear only in the first degree, are multiplied by constants, and are combined only by addition and subtraction**recursive formula** – a formula expressing any term of a sequence as a function of one or more preceding terms**slope** – the steepness of a line, found by dividing the change in the y-value by the change in the x-value**term** – is either a single number or variable, or numbers and variables multiplied together; can be used to refer to the individual items in a sequence of values**term number** – a natural (counting) number that indicates the position of a term in a sequence, starting with 0 or 1; also referred to as an index**x-axis** – the horizontal axis in the Cartesian coordinate system**y-axis** – the vertical axis in the Cartesian coordinate system |
| Lesson 5 | **coordinate grid** – a series of consistent increments where the vertical and horizontal lines intersect**explicit formula** – a formula to determine the nth term of different types of sequences (e.g., $a\_{n}=a+(n-1)d$)**exponential function** – an equation of the form$f(x)=a·bx$, in which the independent variable appears in the exponent**geometric sequence** – an ordered list of terms in which the ratio between any two consecutive terms remains constant**term** – is either a single number or variable, or numbers and variables multiplied together; can be used to refer to the individual items in a sequence of values**term number** – a natural (counting) number that indicates the position of a term in a sequence, starting with 0 or 1; also referred to as an index**x-axis** – the horizontal axis in the Cartesian coordinate system**y-axis** – the vertical axis in the Cartesian coordinate system |
| Lesson 6 | **arithmetic sequence** – an ordered list of terms in which the difference between any two consecutive terms remains constant**common difference** – in an arithmetic sequence, the value of the difference between any two consecutive terms**linear change** – a pattern created when the relationship between the independent and dependent variables remains constant**linear function** – an equation of the form$f(x)=mx+b$, in which the variables appear only in the first degree, are multiplied by constants, and are combined only by addition and subtraction**slope** – the steepness of a line, found by dividing the change in the y-value by the change in the x-value**y-intercept** – the y-coordinate of a point where a line, curve, or surface intersects the y-axis |
| Lesson 7 | **common ratio** – in a geometric sequence, the value of the ratio between any two consecutive terms**exponential equation** – a mathematical statement where the exponent is a variable**exponential growth** – an increasing pattern in which the increase gets steeper over time**geometric sequence** – an ordered list of terms in which the ratio between any two consecutive terms remains constant |
| Lesson 8 | **common ratio** – in a geometric sequence, the value of the ratio between any two consecutive terms**exponential decay function** – a mathematical function in which an independent variable appears in one of the exponents, written in the form$y=a(1-r)x$, where$ a>0$ and $0<r<1$**exponential function** – an equation of the form$f(x)=a·bx$, in which the independent variable appears in the exponent**geometric sequence** – an ordered list of terms in which the ratio between any two consecutive terms remains constant**horizontal asymptote** – a horizontal line that the graph of a function approaches as the x-value of the function gets very large, approaching infinity, or very small, approaching negative infinity**initial amount** – The starting amount or value when x=0 in the exponential function, represented by the variable a in the equation $y=a(1-r)x$, where $a>0$and $0<r<1$**rate of decay** – The rate at which a quantity is decaying, represented by the variable r in the equation y=a(1−r)x, where $a>0$ and $0<r<1$**y-intercept** – the y-coordinate of a point where a line, curve, or surface intersects the y-axis |
| Lesson 9 | **arithmetic sequence** – an ordered list of terms in which the difference between any two consecutive terms remains constant**exponential function** – an equation of the form $f(x)=a·bx$, in which the independent variable appears in the exponent**geometric sequence** – an ordered list of terms in which the ratio between any two consecutive terms remains constant**linear function** – an equation of the form $f(x)=mx+b$, in which the variables appear only in the first degree, are multiplied by constants, and are combined only by addition and subtraction |