Name: ______________________________ Date: _______ Period: ___

Vocabulary THE POW!ER OF WORDS

Math Essential Vocabulary Cards

Assignment:

1. You will create your own set of vocabulary cards (25), which we will use all year.
2. Each card will have two sides:
   a. The front side will have each **word** with an **illustration** that helps you remember the word. Include your **name** at the bottom.
   b. The back side will have the **meaning** of the word and a **sentence** that will demonstrate the meaning of the word through its context.
3. Each card is worth one point for the front and one point for the back = **2 points**.
4. The total grade will be 25 cards x 2 points each = **50 points**.

Example:

Inverse Operations

Inverses "Undo" Each Other

Addition	cancels	Subtraction
Multiplication	cancels	Division

opposite operations or operations that undo each other

Dave used the inverse operation of addition to solve the equation X – 2 = 5.

Words:

Inverse Operations: opposite operations or operations that undo each other

Dave used the inverse operation of addition to solve the equation X – 2 = 5.

Illustration:

Inverses "Undo" Each Other

Addition	cancels	Subtraction
Multiplication	cancels	Division

Negative Exponent: How many times to divide by the number

He evaluated the power 5^{-2} that has a negative exponent of -2 by dividing one by five two times.

Illustration:

$$x^{-n} = \frac{1}{x^n}$$

Product of Powers: add the exponents together of terms that have the same base

The expression b^3 x b^5 can be multiplied together using the product of powers by adding the exponents to get the result of b^8.

Illustration: $$a^m \cdot a^n = a^{m+n}$$

Power of a Power: multiply the exponents together

The expression $(b^2)^4$ can be combined together using the power of a power rule to get b^8.

Illustration: $$\left(a^m\right)^n = a^{mn}$$

Quotient of Powers: subtract the exponents of terms that have the same base in a division problem

The expression $\frac{x^6}{x^4}$ can be combined together using the quotient of powers rule to get x^2.

Illustration: $$\frac{a^m}{a^n} = a^{m-n},\ a \neq 0$$

Domain: the set of all x-values in a function.

She listed all the x-values from the function in order to tell her teacher what the domain was.

Illustration:

x	y
0	2
3	4
-3	-2
2	4

Find the Domain and Range

{(0,2),(3,4),(-3,-2),(2,4)}

Domain: {0,3,-3,2}

Range: {2,4,-2

Range: the set of all y-values in a function

He created a table for the function in order to identify what numbers would be in the range.

Illustration:

x	y
0	2
3	4
-3	-2
2	4

Find the Domain and Range

{(0,2),(3,4),(-3,-2),(2,4)}

Domain: {0,3,-3,2}   Range: {2,4,-2

Function: a relation between a set of inputs and a set of outputs with the property that each input is related to exactly one output.

He was able to identify the function because all the x-values were different in the relation.

Illustration:

Function

Input	Output
-1	5
0	3
1	4
2	7
3	4

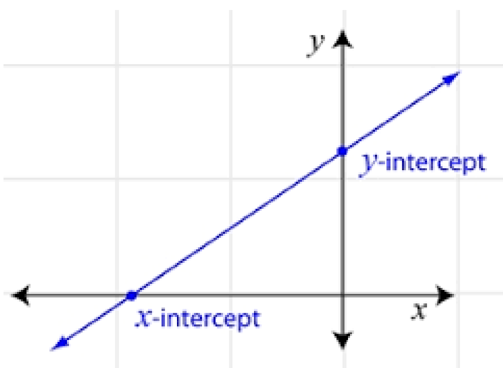
Not a Function

Input	Output
3	0
4	7
5	10
4	14
10	25

X-Intercept: the point on the graph where the line crosses the x-axis.

In order to find the x-intercept, Layla substituted zero in for the variable y in the linear equation.

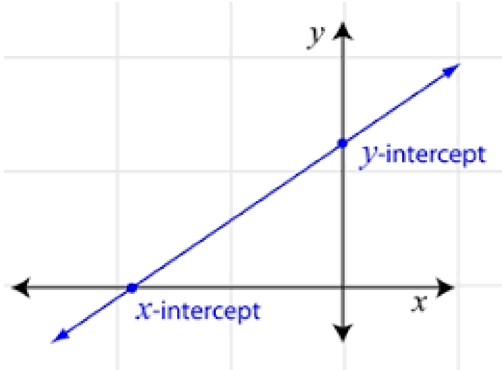
Illustration:



Y-Intercept: the point on the graph where the line crosses the y-axis.

In order to find the y-intercept, Layla substituted zero in for the variable x in the linear equation.

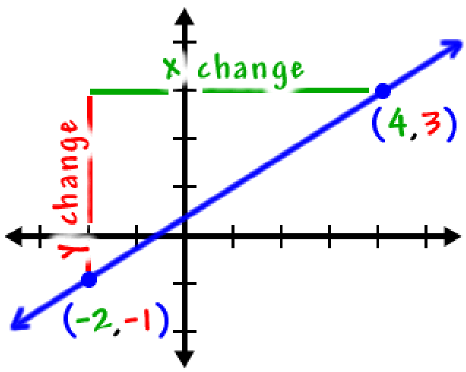
Illustration:



Slope: a measure of the steepness of a line

He compared the two linear equations by identifying the slopes to see which one was increasing faster.

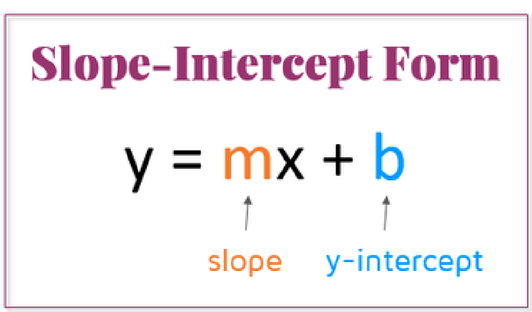
Illustration:



Slope-Intercept Form: a form of writing an equation so that the slope and y-intercept of easily identified, y = mx + b

George wrote the equation in slope-intercept form so that it would be easier to graph on the coordinate plane.

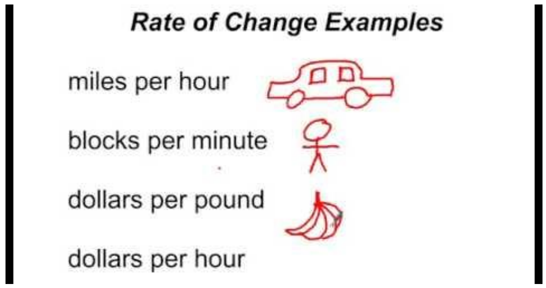
Illustration:



Rate of Change: the ratio of the change in one variable relative to a corresponding change in another, also known as slope

He identified the rate of change of the car by finding the slope of the line on the coordinate plane.

Illustration:



Square Root: a number that produces a specified quantity when multiplied by itself

He was able to identify the square root of 9 as 3 because he knew 3 x 3 was equal to 9.

Illustration:

Cube Root: the number that produces a given number when cubed.

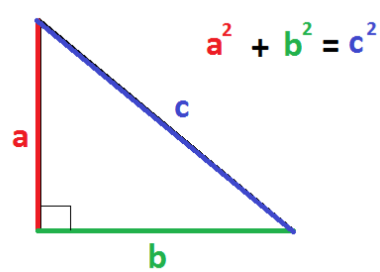
She was able to identify the cube root of 64 as 4 because she knew 4 x 4 x 4 was equal to

Illustration:

Pythagorean Theorem: the square of the length of the hypotenuse of a right triangle equals the sum of the squares of the lengths of the other two sides

Dave used Pythagorean Theorem to find diagonal length across the room since he already knew the length and width of the room.

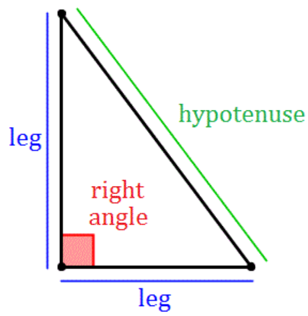
Illustration:



Leg: in a right triangle, the sides that create the right angle

Ian used the two leg lengths in the right triangle in order to find the length of the hypotenuse.

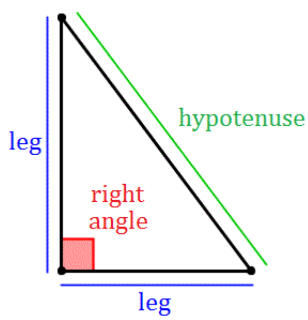
Illustration:



Hypotenuse: in a right triangle, it is the side that is opposite of the right angle, also the longest side of a right triangle

Hallie identified where the right angle was in the right triangle so that she could identify which side was the hypotenuse.

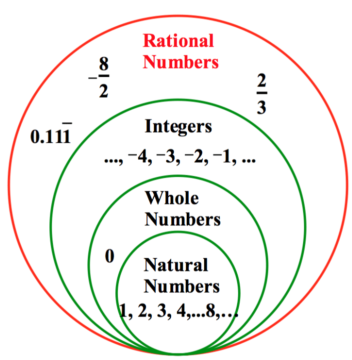
Illustration:



Rational Number: a number that can be expressed as a ratio of two integers. In decimal form, it is a decimal that either ends or a decimal that repeats.

She was able to identify the number as a rational number because she could write it as a fraction.

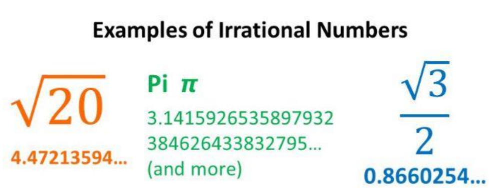
Illustration:



Irrational Number: numbers that cannot be expressed as a ratio between two integers. In decimal form, it is a number that never ends and never repeats.

He knew that Pi was an irrational number because it is a decimal that has infinite numbers and never repeats

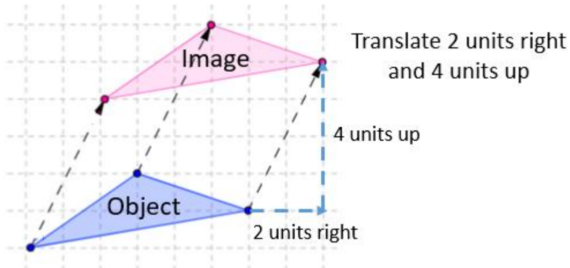
Illustration:



Translation: When an object is moved horizontally or vertically from its original location.

The triangle was translated 3 up and 4 right to get to its new location on the coordinate plane.

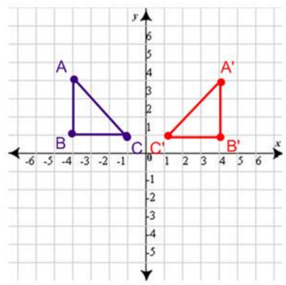
Illustration:



Reflection: A transformation in which a geometric figure is reflected across a line, creating a mirror image.

She identified the reflection because the rectangle appeared to be flipped over the y-axis.

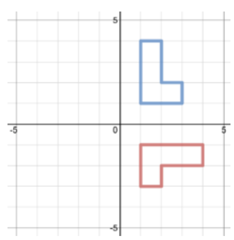
Illustration:



Rotation: A transformation in which a plane figure turns around a fixed center point

The microscope that faced north was rotated 180 degrees in order to see the southern sky.

Illustration:



Dilation: a transformation that changes the size of a figured

The eye doctor dilated the patient's eyes for the exam.

Illustration:

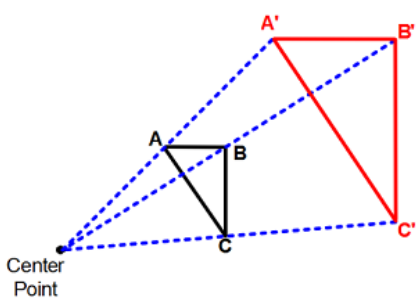


Figure 2

Scale Factor: The ratio of corresponding sides in two similar geometric figures.

The object was dilated by using a scale factor of 2 to make it twice as big as its original size.

Illustration: