## Math-2: Lesson 1-1 (Basic Vocabulary and Properties)

"Expression" (a math "phrase") A name or a symbol for a number

4 x + 3 3x + 4y - 2

Do you see an equal sign in an expression?

"Statement" (a math sentence) A meaningful assertion that is either true or false.

The most common "<u>statement</u>" is an equation. x + 3 = 5

Another "statement" could be an inequality.  $x + 3 \le 5$ 

## Equivalence?

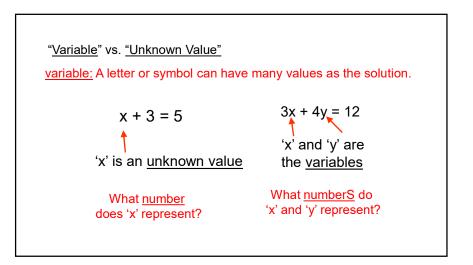
Consult with your neighbor to define "equivalence" as it applies to mathematics.

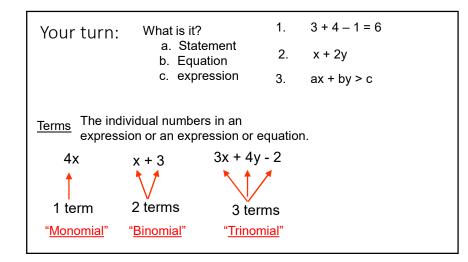
Fill in the \_4 + 7 =\_\_\_\_\_

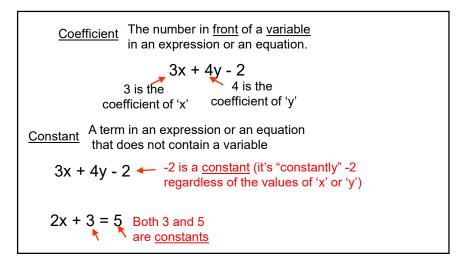
Are there any other possible "equivalences"?

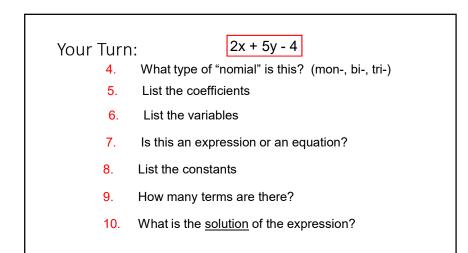
"3" = 
$$\{3, \frac{6}{2}, \frac{3x}{x}, (5-2), \dots\}$$

Equivalent EquationAn equation that means the same thing (has<br/>the same "solution") as the first equation.x = 2and 2x = 4 are equivalent equations.Solution:the number (or numbers) that when<br/>substituted in for the unknown value will make the<br/>statement true.3x + 4 = 7Is 5 a solution of the equation?<br/>Does the equation have more than one solution?Can an expression have a solution?Are expressions math statements?

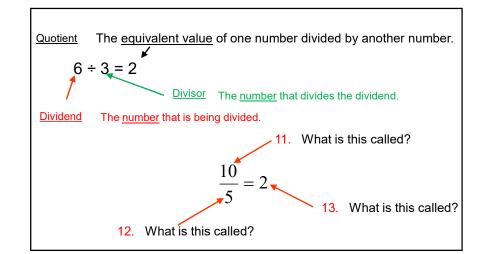


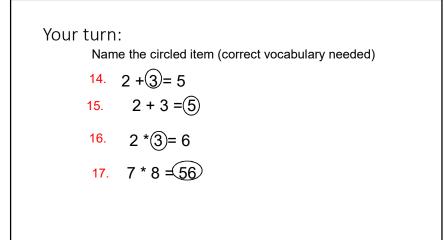






Sum The <u>answer</u> when you add two or more numbers together.
2 + 3 = 5 Addends The <u>numbers</u> that are added together to get the sum.
<u>Factors</u> The <u>numbers</u> that are multiplied together to get an <u>equivalent</u> value.
2 x 3 = 6 " <u>Product</u> " The <u>equivalent value</u> of factors multiplied together.





<u>Mathematical Property</u>: a general rule that, when applied to an expression or an equation, results in an <u>equivalent</u> expression or equation.

We use properties to rewrite expressions and equations as in <u>equivalent</u> more-simplified forms.

The following properties are so easy, that you have been applying them without even thinking about them.

You must know the name of each property and be able to give an example of its use.

## **Identity Property of Addition**

Adding <u>zero</u> to a number results in the original number being the <u>sum</u>.

5 + 0 = 5

Think: "zero added to any number will not change the "identity" of the number."

Inverse Property of AdditionAdding a number so its "opposite" (sign)<br/>results in zero as the sum.5 + (-5) = 0Think of the additive inverse<br/>of a number as the "opposite"<br/>or "negative" of the number.What is the additive inverse<br/>of -22?Of 2/3?

Identity Property of MultiplicationMultiplying any number by one<br/>results in the original number<br/>being the product.5(1) = 5Think: "one multiplied by any number will not<br/>change the "identity" of the number."

