"Expression" (a math "phrase")   A name or a symbol for a number (examples: (4)   (x + 3)   (3x + 4y − 2)

Expressions do not have equal signs nor inequality signs. There is *no solution* for an expression.

"Statement" (a math sentence) A meaningful assertion that is either true or false. Math statements *have solutions.*   The most common "statement" is an equation.   x + 3 = 5
Another "statement" could be an inequality. x + 3 ≤ 5

Equivalence   When the expression on both sides of the equal sign have the same meaning. For example: <u>Three</u> can be written many difference ways. $"3" = \{3, \dfrac{6}{2}, \dfrac{3x}{x}, (5-2),...\}$

<u>Solution</u>: the number (or numbers) that when substituted in for the "letter" (x, y, m, etc.) make the statement true.

<u>Equivalent Equations</u>: equations that don't look the same but have the *same solution.*
x = 2   and 2x = 4 are <u>equivalent equations.</u>

<u>Variable</u>: a "letter" the can take on *more than one value* and still make the equation (or inequality) true.

3x + 4y = 12

<u>unknown value</u>: A letter or symbol can only <u>one value</u> to make the equation true.

'x' and 'y' are the <u>variables</u>

x + 3 = 5

'x' is an <u>unknown value</u>

<u>Terms</u>   The individual numbers in an expression or an equation that are <u>separated by either</u> <u>*a "+" or a "-" symbol.*</u>

<u>Monomial</u>: a single term expression   4x

<u>Binomial</u>: a expression with <u>*two unlike terms.*</u>   x + 3

<u>Trinomial</u>: a expression with two <u>*three unlike terms.*</u> $2x^2 + 3x - 4$

<u>Polynomial</u>: a expression with formed by the addition of "same-based powers" that usually has more than t<u>*hree unlike terms.*</u> $x^3 - 5x^2 + x - 1$

<u>Coefficient</u>   The number in <u>front</u> of a <u>variable</u> in an expression or an equation.

3x + 4y - 2

3 is the
coefficient of 'x'

4 is the
coefficient of 'y'

<u>Constant</u>   A term in an expression or an equation that does not contain a variable

3x + 4y + 2 ⟵   2 is a <u>constant</u> (it's "constantly" -2 regardless of the values of 'x' or 'y')

<u>Factor</u> (noun)   a number (or expression) that is being multiplied by another number (or expression).

$2x$ <u>Has factors of '2' and 'x'.</u>

To Factor (verb) to break a number or an expression into two (or more) parts (factors) that are multiplied together. $10 \rightarrow 2^*5$

Common Factor (noun) a number that is a factor of all terms in an expression.
          The expression 2x + 6 has the common factor '2' in both terms
        We can see this if we factor each term individually: 2x + 6 $\rightarrow$ (2*x) + (2*3)

"Factoring out" a common Factor from an expression means to rewrite the expression as the
        common factor multiplied by the expression.   2x + 6 $\rightarrow$ 2(x + 3)

      Factoring out the common factor: the "reverse" of the distributive property.

              2(x + 3)   =   2x + 6

The "Box Method" of multiplying binomials is an arrangement of the two terms in on of the binomials in two separate rows and the two terms of the other binomial as headers of two columns. Rows and columns are multiplied together to obtain four terms that a then added together.

$(x - 3)(x + 4)$ $\rightarrow$

	x	4
x	x²	4x
-3	-3x	-12

$\rightarrow$ $x^2 + x - 12$