

Variables and Expressions



Objective: You will learn the difference between a variable, constant, and coefficient. You will also learn how to evaluate expressions.



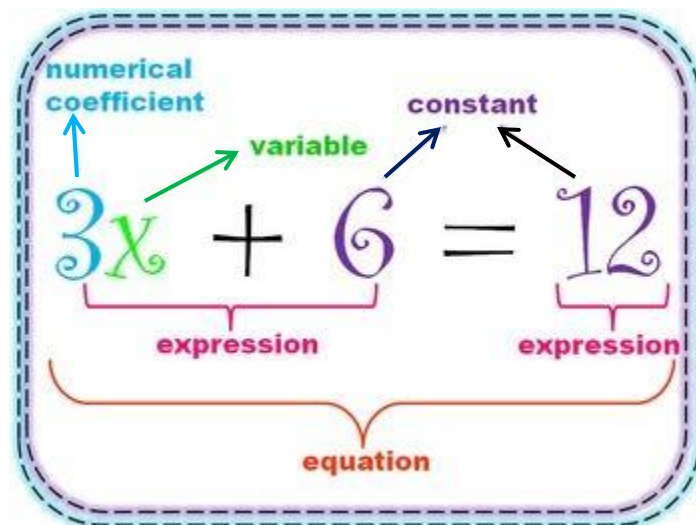
Terms:

Expression: a mathematical phrase involving constants, variables, coefficients, and operations.

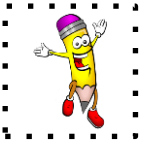
Variable: a quantity that can change or vary. In an algebraic expression, the variable is often written as a letter.

Constant: is a quantity that does not change. In an algebraic expression, the constant is/are the number(s).

Coefficient: is a number used to multiply a variable. For example, in the expression: $2m + 5$, 2 is the coefficient.

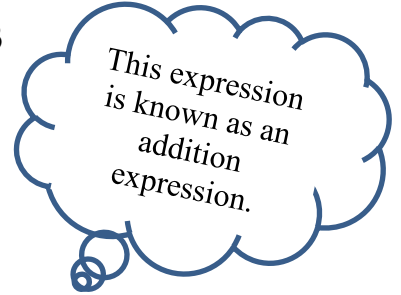


If you know the values of the variables, you can evaluate the expression by replacing the variable with each value. This is known as substituting a value for a variable.



Example #1: Evaluate the expression for $x = 1, 2,$ and 3

$$8 + x$$



Step 1: Substitute 1 for x
 $8 + 1 = 9$

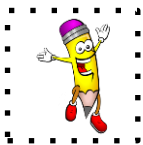
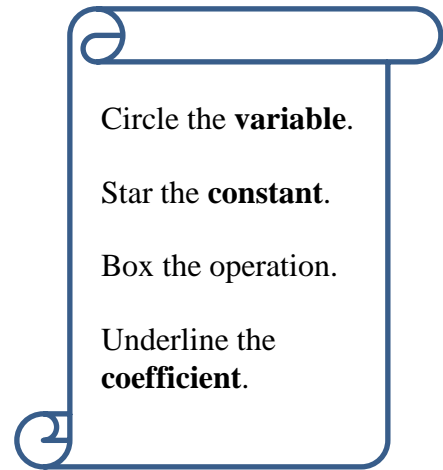
Step 2: Substitute 2 for x

$$8 + 2 = 10$$

Step 3: Substitute 3 for x

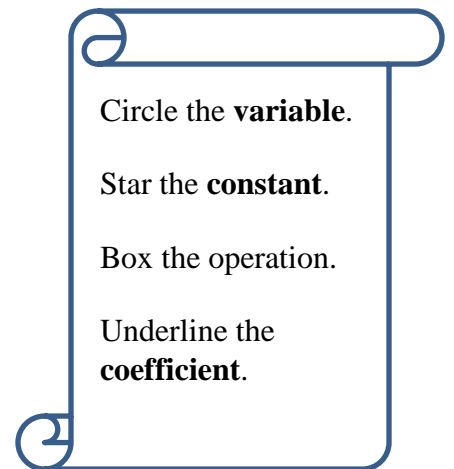
$$8 + 3 = 11$$

Therefore, $8 + x$; **9, 10,** and **11**



Example #2: Evaluate the expression for $x = 3, 4,$ and 5

x	12-x	5x
3	9	15
4	8	
5		25





YOU GOT THIS:

1. Evaluate the following multiplication equation for $x = 3, 5,$ and 6

$$4x - 3$$

Circle the **variable**.

Star the **constant**.

Box the operation.

Underline the **coefficient**.

- 2.

x	$\frac{28}{x}$
4	
7	
28	

Circle the **variable**.

Star the **constant**.

Box the operation.

Underline the **coefficient**.



CHALLENGE:

3. Complete the table for the values given:

Expression:	$c = 3, d = 5$	$c = 2, d = 4$	$c = 10.5, d = 6.1$
$c + d$			
$c \cdot d$			
$c^2 + d$			
$c^2 + d^2$			
$2c - 2d$			

Work space: