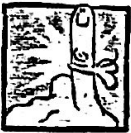


## Variables and Expressions



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



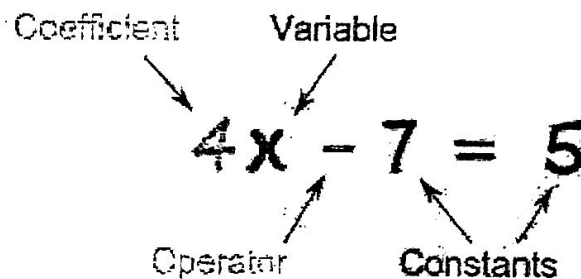
### Terms:

**Expression:** is the mathematical phrase involving constants, variables, coefficients, and operations.

**Variable-** is 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.

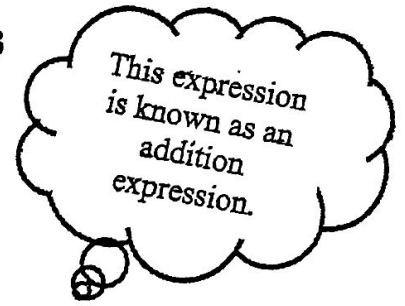


If you know the values of the variables, you can evaluate the expression by replacing the variable with each value. This is known as substituting a value for a variable.



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

$$8 + x$$



Step 1: Substitute 1 for  $x$

$$8 + 1 = 9$$

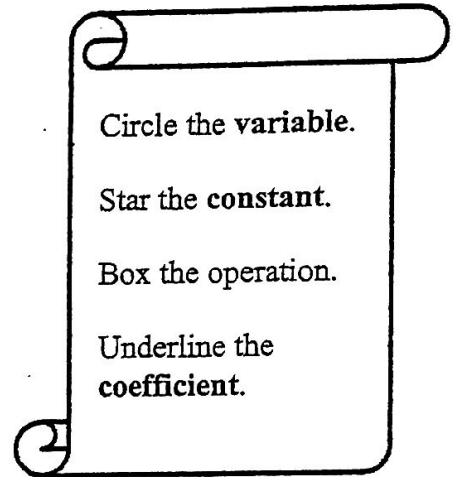
Step 2: Substitute 2 for  $x$

$$8 + 2 = 10$$

Step 3: Substitute 3 for  $x$

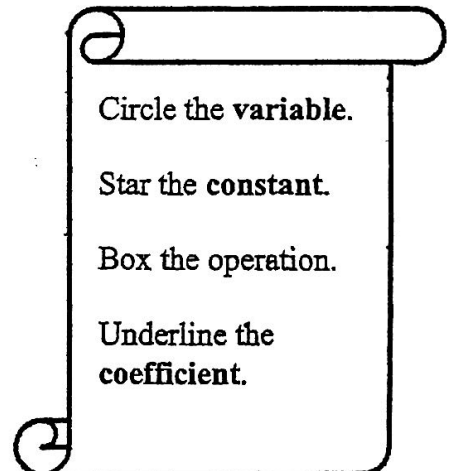
$$8 + 3 = 11$$

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.

<b>x</b>	$\frac{28}{x}$
4	
7	
28	

Circle the **variable**.

Star the **constant**.

Box the **operation**.

Underline the **coefficient**.