

# Evaluating Expressions

6<sup>th</sup> Grade Mathematics

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An **expression** is a mathematical phrase that contains operations, numbers, and/or *variables*.

A **variable** is a letter that represents a value that can change or vary.

To evaluate an algebraic expression, substitute a given number for the variable.

# Order of Operations

## PEMDAS:

1. **P**arentheses ( )
2. **E**xponents <sup>2</sup>
3. **M**ultiply and **D**ivide from left to right.
4. **A**dd and **S**ubtract from left to right.

## Example 1

Evaluate the expression for the given value of the variable.

$$x - 5 \text{ for } x = 12$$

$$12 - 5$$

$$12 + -5$$

$$7$$

*What is “x” equal to?*

*Substitute 12 for “x”.*

*Rewrite*

*Subtract.*

## Example 2

Evaluate the expression for the given value of the variable.

$$2y + 1 \text{ for } y = 4$$

$$2(4) + 1$$

$$8 + 1$$

$$9$$

*What is “y” equal to?*

*Substitute 4 for “y”.*

*Multiply.*

*Add.*

## Example 3

Evaluate the expression for the given value of the variable.

$$x + 5 \text{ for } x = 3$$

$$3 + 5$$

$$8$$

*What is the “x” equal to?*

*Substitute 3 for “x”.*

*Add.*

## Example 4

Evaluate the expression for the given value of the variable.

$$4c + 1 \text{ for } c = 11$$

$$4(11) + 1$$

$$44 + 1$$

$$45$$

*What is the “c” equal to?*

*Substitute 11 for “c”.*

*Multiply.*

*Add.*



## Example 5

Evaluate each expression for the given values of the variables.

$$9r - 2p \text{ for } r = 3 \text{ and } p = 5$$

$$9(3) - 2(5) \quad \textit{Substitute 3 for "r" and 5 for "p".}$$

$$27 - 10 \quad \textit{Multiply.}$$

$$27 + -10 \quad \textit{Rewrite}$$

$$17 \quad \textit{Subtract.}$$