# 8.1 Substituting Values into Algebraic Expressions

Example 1: Calculate     3m + 6     if you are given that     m = 2

Answer:     You have to "substitute" or "replace" the variable "m"
            with given value for "m", which in this case is 2.

    3m + 6
    = 3(2) + 6          MAKE SURE YOU
    = 6 + 6             SHOW YOUR WORK
    = 12               LIKE I HAVE!!!

NOTE: You must follow BEDMAS when calculating the value:

Example 2:   Calculate     3x + 8     if you are given     x = -2

Answer:      3x + 8     if     x = -2
            = 3(-2) + 8
            = -6 + 8
            = 2

Now try a few of these on your own.  Remember to follow your order of operations. (BEDMAS)

Calculate the following:

| a) 12 – 2p    when p = 2 | b) 9 + 2r – 6  when r = 4 | c) a + $\frac{6b}{2}$    when a = 2, b = 3 |
|---|---|---|
|  |  |  |

HOMEWORK: Substitution into Algebraic Expressions Worksheet

# Substitution into Algebraic Expressions Worksheet

Directions: Please answer the following in your binders/ scribblers.  Do not do the work on the sheet there is not enough room.

1.  If a = 2, b = 5, and c = 7, evaluate the following by substituting these values into the following:

| | | | | |
|---|---|---|---|---|
| a) 3b | b) 6a | c) 2c | d) 4b | e) 3c |
| f) 2b + 3 | g) 3a + 1 | h) 2c – 3 | i) 5a + 7 | j) 9b |
| k) a + b | l) a + c | m) c – b | n) a + b + c | o) –a |
| p) 3a + 2b | q) 5c + 2a | r) 3b + 2c | s) 9a – 2b | t) -3c |

2.  If a = 3, b = 4, and c = 10, evaluate the following by substituting these values into the following:

| | | | | |
|---|---|---|---|---|
| a) 3b | b) 6a | c) 2c | d) 4b | e) 3c |
| f) 2b + 3 | g) 3a + 1 | h) 2c – 3 | i) 5a + 7 | j) 9b |
| k) a + b | l) a + c | m) c – b | n) a + b + c | o) –a |
| p) 3a + 2b | q) 5c + 2a | r) 3b + 2c | s) 9a – 2b | t) -3c |

3.  If a = 0, b = 20, and j = 0, evaluate the following by substituting these values into the following:

| | | | | |
|---|---|---|---|---|
| a) 3b | b) 6a | c) 2c | d) 4b | e) 3c |
| f) 2b + 3 | g) 3a + 1 | h) 2c – 3 | i) 5a + 7 | j) 9b |
| k) a + b | l) a + c | m) c – b | n) a + b + c | o) –a |
| p) 3a + 2b | q) 5c + 2a | r) 3b + 2c | s) 9a – 2b | t) -3c |

4.  If x = 3, y = 2 and z = 5, try to complete the following algebraic expressions: HINT: substitute the variables (letters) for the ??? marks.

a) ? + ? = 7      b) ? + ? = 5        c) ? - ? = 2        d) 2? + 3? = 16

5.  A builder rents a digger.  He pays a fixed charge of $30 plus $10 per hour to rent the digger.  Work out how much he pays to rent the digger for:

a) 1 hour     b) 3 hours    c) 4 hours   d) 10 hours     e) n hours
HINT: for part e) can you write an algebraic expression.