

Substituting Values



This sheet is designed as a review aid. If you have not previously studied this concept or after reviewing the contents you still don't pass you should enroll in the appropriate math class.

In algebra, letters are used as place holders for values or numbers. These letters (x, y, z, a, b, c, etc.) will each represent a distinct value or number. They are like blank spaces in a simple math problem (i.e. $4 + 2 = \underline{\quad}$ is the same as $4 + 2 = x$). The advantage of using letters in stead of blanks is that you can work with more than one blank with different values and keep them separate. Also, multiple blanks in a formula that need to carry the same value can be designated the same. In a given formula where y represents more than 1 blank, the same value should be used in all locations of y. If the formula also includes a z, the z may represent a different value.

In substituting values problems, you will be given specific numbers to substitute for one or more of the letters.

Let $b = 3$, $c = 15$ These are the letters and the values to substitute.

$5b - 2c + \frac{c}{b} =$ This is the formula. In the formula, substitute 3 for b and 15 for c.

$5(3) - 2(15) + \frac{15}{3} =$ At this point, you can work the problem.

$15 - 30 + 5 = -10$ Final answer.

Sometimes you will be asked to solve for one letter, given the value of another.

Example:

If x is 5, solve for y in the following formula:

$$5x + 3y = 31$$

Substitute 5 for the x and solve the problem:

$$5(5) + 3y = 31$$

$$25 + 3y = 31$$

$$3y = 6$$

$$y = 2$$

Points to Consider:

1. Letters are placeholders for specific numbers.
2. You will be given at least one number to substitute in place of most or all of your letters.
3. If you are not given a value for one of the letters, you will be using the other values to solve for that letter.
4. If you are given more than one value for a letter (a number set), you will insert each value separately and solve the equation for each corresponding value of the other letter. Your answer will be another number set.