

5.1 Variables and Substitutions - Worksheet 1

1 Determine the value of the expression $3p + 5q$ when $p = -2$ and $q = -1$. Show the calculation and write your result as an if-then statement.

The most common errors on these problems tend to be the simple arithmetic steps. Take your time and be careful!

2 Substitute $b = 3a - 5$ into the expression $2b + 3$ and simplify the result. Use a complete presentation.

3 Check the presentation for errors. If you find one, circle it and describe the mistake in words.

$$\begin{aligned} -x + 5 &= -y + 3 + 5 \\ &= -y + 8 \end{aligned}$$

Substitute $x = y + 3$
Arithmetic

Be aware of this error so that you can avoid making it yourself!

5.2 Variables and Substitutions - Worksheet 2

1 Determine the value of the expression $4a - 3b$ when $a = -3$ and $b = 4$. Show the calculation and write your result as an if-then statement.

2 Substitute $n = -2m + 1$ into the expression $-n + 2$ and simplify the result. Use a complete presentation.

3 Substitute $y = 2x - 3$ into the expression $2x + 3y$ and simplify the result. Use a complete presentation.

5.3 Variables and Substitutions - Worksheet 3

1 Determine the value of the expression $x - y^2$ when $x = 2$ and $y = -3$. Show the calculation and write your result as an if-then statement.

2 Solve the equation $-3a + 4b - 7 = 5$ for a when $b = -2$. Use a complete presentation.

3 Check the presentation for errors. If you find one, circle it and describe the mistake in words.

$-3p + 4q = 5$	
$-3(q - 4) + 4q = 5$	Substitute $p = q - 4$
$-3q - 12 + 4q = 5$	Distributive property
$q - 12 = 5$	Combine like terms
$q = 17$	Add 12 to both sides

5.4 Variables and Substitutions - Worksheet 4

1 Substitute $s = -2t + 1$ into the equation $2s + 1 = 4$ and solve for the variable. Use a complete presentation.

2 Solve the equation $3m - 2n - 7 = 5$ for n when $m = 4n - 3$. Use a complete presentation.

3 Substitute $x = 3$ into the expression $x^2 - 6x + 9$ and simplify the result. Use a complete presentation.

The value of x must be the same for the entire expression. We do not want x to take two different values at the same time.

5.5 Variables and Substitutions - Worksheet 5

1 Check the presentation for errors. If you find one, circle it and describe the mistake in words.

$5x - y = 4$	
$5x - (3x + 4) = 4$	Substitute $y = 3x - 2$
$5x - 3x - 4 = 4$	Distributive property
$2x - 4 = 4$	Combine like terms
$2x = 0$	Subtract 4 from both sides
$x = 0$	Divide both sides by 2

2 Substitute $n = -2m - 3$ into the expression $-3m - 2n + 5$ and simplify the result. Use a complete presentation.

3 Solve the equation $-2a + 3b - 7 = b$ for a when $b = -a + 2$. Use a complete presentation.