

Math 1513 - College Algebra

Quiz #1 - 2018.08.22

Solutions

For the following problems, consider the following equation:

$$3xy - 4 + 4xz = y + 2$$

1. Solve the given equation for the variable z .

First we get the only term with z in it all alone by itself on one side of the equation, it does not matter which side, but let's leave it on its current side, which means we need to subtract the quantity $3xy - 4$ from both sides:

$$4xz = y + 2 - (3xy - 4).$$

Combining the constant terms on the right hand side gives

$$4xz = y + 6 - 3xy.$$

Now we simply divide both sides $4x$ to get z all by itself on the left-hand side:

$$z = \frac{y + 6 - 3xy}{4x}.$$

2. Solve the given equation for the variable x .

There are two terms with the variable x in them, both on the left-hand side, so we shall leave them there, which means all we have to do is add 4 to both sides:

$$3xy + 4xz = y + 6.$$

Next we factor an x out of both terms on the left-hand side:

$$x(3y + 4z) = y + 6.$$

Now we divide both sides by the term multiplied by x :

$$x = \frac{y + 6}{3y + 4z}.$$