



Mixed Practice: One-Step Equations Assignment

Recall that an equation is a mathematical statement where two expressions are joined with an equal sign. Over the past few lessons, you have learned how to solve one-step equations. A one-step equation needs only one inverse operation to solve. Remember that the goal of solving an equation is to end up with the variable all by itself on one side of the equal sign and a single number on the other side of the equal sign. The steps you have learned to solve equations are shown in the table below.

Step 1:	Identify the inverse of the operation that is with the variable.
Step 2:	Set up the inverse operation on both sides of the equation.
Step 3:	Simplify both sides of the equation.
Step 4:	Check the solution using substitution.
Step 5:	Plot the solution on a number line, if requested.

Identifying the operation that is on the same side of the equal side as the variable and then determining the inverse of that operation is a very important step when solving equations. You use the operation to build the equation, and you can use the inverse of that operation to undo it. Practice identifying operations and their inverses below. Look at the equation in the first column. Then state the operation and its inverse in the remaining columns. (1 point per blank, 8 points total)

<i>Equation:</i>	<i>Operation:</i>	<i>Inverse Operation:</i>
$15 = \frac{x}{7}$		
$y + \frac{1}{2} = \frac{3}{4}$		
$m - 8 = -11$		
$-3.5y = 66.5$		

Now use the process for solving one-step equations, along with the table of operations and inverses you created, to complete the following problems. When asked, sketch a horizontal number line to plot your solution. Remember that checking your work using substitution is very important. If you substitute and the statement turns out to be false, then you need to go back and correct your work.

1. Solve $m - 8 = -11$ for m . Plot your solution on a horizontal number line. (3 points)

2. Solve $y + \frac{1}{2} = \frac{3}{4}$ for y . Plot your solution on a horizontal number line. (3 points)

Recall that you need to have common denominators when you add or subtract fractions.

3. Solve $15 = \frac{x}{7}$ for x . Plot your solution on a horizontal number line. (3 points)

4. Solve $-3.5y = 66.5$ for y . Plot your solution on a horizontal number line. (3 points)

5. Rita was asked to solve the equation $f - (-5) = -20$. Her work is shown below.
Explain Rita's mistake and then provide the correct answer. (3 points)

Step 1: $f - (-5) = -20$

Step 2: $f - (-5) + 5 = -20 + 5$

Step 3: $f = -15$

6. Lucy went to the grocery store and bought groceries for a total of \$77. The cashier gave her \$23 dollars in change. The equation $m - 77 = 23$ represents this scenario.
Solve the equation for m , the amount of money Lucy gave the cashier. Show all work and be sure to check your answer. (2 points)

7. Dominic has a piece of rubber that measures 7.8 inches. For a project, he heated and stretched it to 12.5 inches. He wants to determine how many inches he was able to stretch the rubber using the equation $7.8 + s = 12.5$.

Solve the equation for s , the number of inches the piece of rubber was stretched. Show all work and be sure to check your answer. (2 points)

8. Terrell works for a potato chip factory. He needs to determine the weight of a case of potato chips. He knows that a case of potato chips contains 24 bags. Each bag weighs 5.2 ounces. He set up the equation $\frac{w}{5.2} = 24$ to determine the total weight of the case.

Solve the equation for w , the total weight of the case of potato chips. Show all work and be sure to check your answer. (2 points)