

$$3 \cdot \frac{n-9}{3} = -5 \cdot 3$$

$$\begin{array}{r|l} n-9 = -15 & \\ +9 & +9 \\ \hline & -6 \end{array}$$

**CLO:**

**Students will solve equations that have a variable on each side of the equal sign and write about the similarities and differences compared to other equations we have worked with.**

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**Warm - Up**

**Solve for the given variable.**

**1.  $-4(2x - 8) - 7 = -23$**

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Write an example of at least three different problems we have worked on in the last week.

$$\frac{8+x}{9} = 8$$

$$5 + 6 \cdot 2$$

$$3x + 10 = 11$$

$$3 + 5^2$$

CLO:

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Look at the two problems below and write about the similarities and differences you see between them.

1.  $\frac{6(-2x+5)}{3} + 8 = 14$

2.  $3(x+7) - 2 = 4x + 9$

similarities  
both have variables  
both use ( )  
both have + and -  
variable attached to #

Differences  
#1 has 1x # has 2 x's  
#1 has a fraction

CLO:

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When dealing with solving for a variable there are a variety of different types of problems we deal with, the problem below is no exception.

$$3(x + 7) - 2 = 4x + 9$$

1. What is the goal of this problem? Solve for the variable
2. What is the first step? Distribute the 3
3. What is the second step? Combine any like terms
4. What is the third step? combine x terms and non x terms
5. What is the fourth step? Inverse operations to solve for x
6. What is the fifth step? \_\_\_\_\_

CLO:

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Let's work through it together to solve it!

$$\begin{array}{r} 3(x+7) - 2 = 4x + 9 \\ 3x + 21 - 2 = 4x + 9 \\ 3x + 19 = 4x + 9 \\ -3x \quad -3x \\ \hline 19 = 1x + 9 \\ -9 \quad -9 \\ \hline 10 = 1x \\ 10 = x \end{array}$$

CLO:

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Try it on your own!

$$3(x + 8) - 4 = 6x + 8$$

$$3x + 24 - 4 = 6x + 8$$

$$3x + 20 = 6x + 8$$

$\quad -8 \qquad \qquad -8$

$$3x + 12 = 6x$$

$$\begin{array}{r} -3x \\ 12 = 3x \\ \hline 3 \end{array} \quad x = 4$$

What is your goal?

CLO:

Students will solve equations that have a variable on each side of the equal sign and write about the similarities and differences compared to other equations we have worked with.

Try it on your own!

$$-2(x - 8) + 4 = 4x + 10$$

$$-2x + 16 + 4 = 4x + 10$$

$$\begin{array}{r} -2x + 20 = 4x + 10 \\ +2x \quad +2x \end{array}$$

$$\begin{array}{r} 20 = 6x + 10 \\ -10 \quad -10 \\ 10 = 6x \\ \frac{10}{6} = \frac{6x}{6} \end{array} \quad \boxed{x = 1.\bar{6}}$$

$$x = \frac{10}{6}$$

$$x = \frac{5}{3}$$

$$x = 1\frac{2}{3}$$

What is your goal?

**CLO:**

**Students will solve equations that have a variable on each side of the equal sign and write about the similarities and differences compared to other equations we have worked with.**

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**You are now going to be given a half sheet of paper, you have 10 minutes to work through each problem, quietly.**

**When you are finished I will give you your next set of instructions.**



