

**Warm Up**  
week 7

Solve the equation.

$$\begin{array}{r} -6(4 - x) = 12x - 24 \\ -24 + 6x = 12x - 24 \\ \hline -24 = 6x - 24 \\ +24 \quad \quad +24 \\ \hline 0 = 6x \\ \frac{0}{6} = \frac{6x}{6} \\ \text{X} = 0 \end{array}$$

**Homework Questions?**

On the top of your paper (by your name) rate yourself for this section:

**4 - I can summarize the concepts and explain it to others**

**3 - I can apply the concept to answer questions correctly**

**2 - I can apply the concepts but with some mistakes**

**1 - I need help and know how to apply the concept**

**0 - I can't apply the concept, even with help**

\*Rating of 0-2 is a warning signal to me that you need help\*

**Quiz 3.3 was out of 30pts**

**A - 27**

**B - 24**

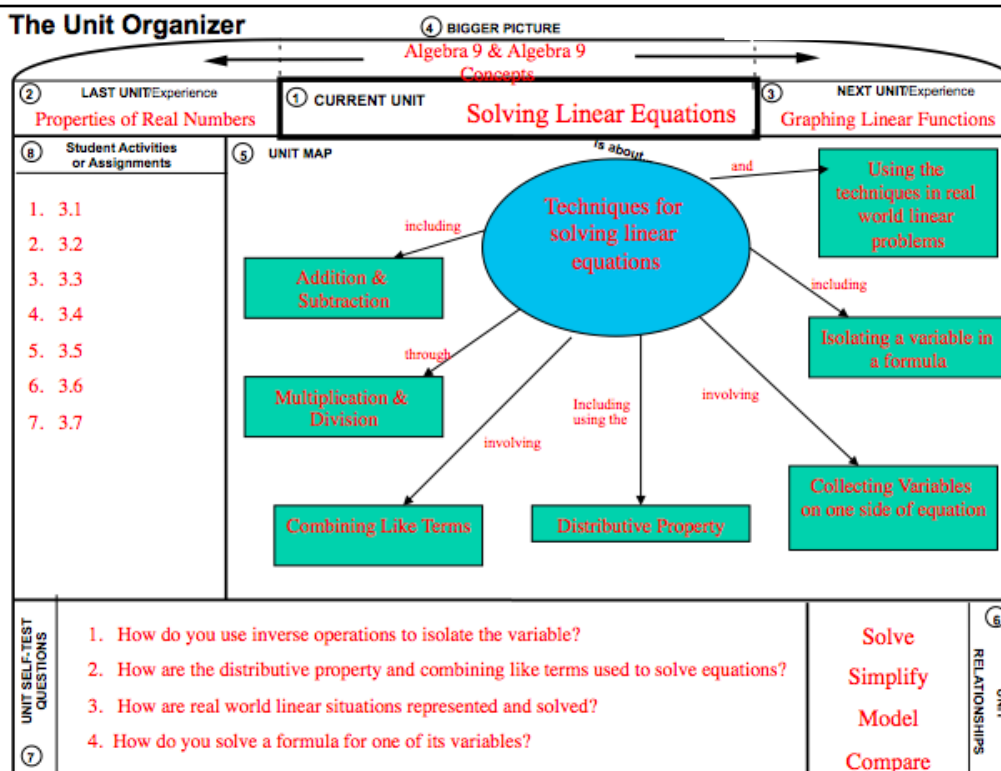
**C - 21**

**D - 18**

# 3.6 Solving Decimal Equations

**Goals:** • Find exact and approximate solutions of equations that contain decimals.

**EQ:** Solve  $-16x - 18 = 3$ . Round answer to the nearest hundredth.



## Vocabulary

### Rounding error:

Round off answers  
 If next digit is 5 or higher Round Up  
 is 4 or lower Stay the Same

Label each place value

$568.4587$   
1/10   1/100 → 1/1000  
1/10000  
hundreds   tens   ones

### Rounding

Round the result to the nearest tenth and then to the nearest hundredth.

$$-36.1923$$

tenth:  $-36.2$

hundredth:  $-36.19$

$$-6.895 + 4.929$$

$$= -1.966$$

hundredth:  $-1.97$

tenth:  $-2.0$

**Example 1: Round for the Final Answer**Solve  $-28x + 31 = 124$ . Round to the nearest hundredth.

$$\begin{array}{r} -31 \quad -31 \\ \hline -28x = 93 \\ \hline -28 \quad -28 \\ \hline x = -3.\underline{32}1428\dots \end{array}$$

2 decimal places

$$x \approx -3.32 \quad \approx$$

**\*\*Hint:** When you substitute a rounded answer into the original equation, the two sides of the equation may not be exactly equal, but they should be almost equal. Use the symbol  $\approx$  to show that quantities are approximately equal.

**Example 2: Solve an Equation that Contains Decimals**Solve  $2.5x - 60.2 = 0.2x$ . Round to the nearest ~~tenth~~.

$$\begin{array}{r} -2.5x \quad -2.5x \\ \hline -60.2 = -2.3x \\ \hline -2.3 \quad -2.3 \\ \hline \end{array}$$

hundredth

$$x = 26.\underline{17}39\dots$$

$$x \approx 26.17$$

**Try It** Solve the equation. Round to the nearest hundredth.

1.  $11x - 5 = 26$

$$\begin{array}{r} +5 \quad +5 \\ \hline 11x = 31 \\ \hline \end{array}$$

$$x = 2.8181\dots$$

$$x \approx 2.82$$

2.  $23 - 6y = 7$

$$\begin{array}{r} -23 \quad -23 \\ \hline -6y = -16 \\ \hline \end{array}$$

$$y = -2.6666\dots$$

$$y \approx -2.67$$

3.  $-48 = 13n + 14$

$$\begin{array}{r} -14 \quad -14 \\ \hline -62 = 13n \\ \hline \end{array}$$

$$n = -4.7692\dots$$

$$n \approx -4.77$$

**Try It** Solve the equation. Round to the nearest tenth.

4.  $6.3x - 54.8 = 0.8x + 9.5$

5.  $12.8 + 2.7x = 5.5 + 7.2x$

# Summary

**EQ:** Solve  $-16x - 18 = 3$ . Round answer to the nearest hundredth.

## 3.6 Homework

p.166 #16-34even

$$\begin{array}{r} -16x - 18 = 3 \\ \quad +18 \quad +18 \\ \hline -16x = 21 \\ \quad \underline{-16} \quad \underline{-16} \\ x = -1.3125 \\ \boxed{x \approx -1.31} \end{array}$$