

Warm up

Week 5

Solve the equation.

1.

$$2x + 7 = 15$$

$$2x = 8$$

$$x = 4$$

2.

$$30 = 16 + \frac{1}{5}x$$

$$\frac{5}{1} \cdot 14 = \frac{1}{5}x \cdot \frac{5}{1}$$

$$70 = x$$

3.

$$3x - 7 + x = 5$$

$$4x - 7 = 5$$

$$4x = 12$$

$$x = 3$$

4.

$$12(2 - x) = 6$$

$$24 - 12x = 6$$

$$\frac{-12x = -18}{-12} \div 6$$

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

Homework Questions?

$$32) \quad \frac{-4}{9}(2x - 4) = 48$$

$$\frac{-8}{9}x + \frac{16}{9} = 48$$

$$-16/9 \quad -16/9$$

$$\frac{9}{-8} \cdot \frac{-8}{9}x = \frac{416}{9} \cdot \frac{9}{-8}$$

$$x = -52$$

34

$$\frac{4x}{3} + 3 = 23$$

$-3 \quad -3$

---

$$\frac{4x}{3} = 20$$

$$\frac{3}{4} \cdot \frac{4}{3} x = 20 \cdot \frac{3}{4}$$

$$x = \frac{60}{4} = 3\frac{3}{2} = 15$$

36

$$-10 = \frac{1}{2}x + 1x$$

$$-10 = \frac{3}{2}x$$

$$| \cdot \frac{2}{3} = \frac{3}{2}$$

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 3.1-3.3

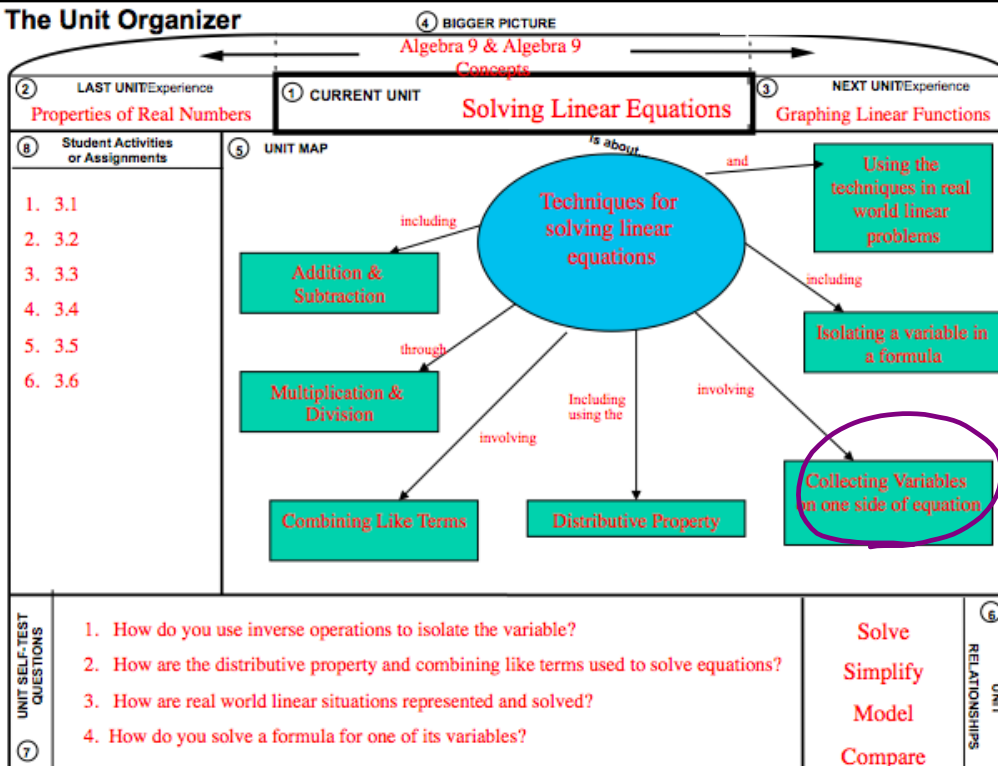
Out of 40pts  
37.5 A  
36 A-  
32 B-  
28 C-  
24 D-

# 3.4 Solving Equations with Variables on Both Sides

**Goal:** • Solve equations that have variables on both sides

**EQ:** How do you get the variable onto one side?

## The Unit Organizer



Town A has population 3225 and will grow 100 people each year.  
 Town B has a population of ~~3300~~ and will grow 75 people each year.  
 After how many years will the populations be equal? (set up equation)

$$3225 + 100x = 3300 + 75x$$



What is the solution of  $3x + 4 = 5x - 10$

\*Need to get the variables on the same side

$$3x + 4 = 5x - 10$$

$$-5x \quad -5x$$

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

$$-4 \quad -4$$

$$\frac{-2x}{-2} = \frac{-14}{-2}$$

$$x = 7$$

$$3x + 4 = 5x - 10$$

$$-3x \quad -3x$$

$$4 = 2x - 10$$

$$+10 \quad +10$$

$$\frac{14}{2} = \frac{2x}{2}$$

$$x = 7$$

$$4p + 2 = 3p - 7$$

$-3p$                        $-3p$

$$p + 2 = -7$$

$-2$                        $-2$

$$p = -9$$

## Try It

$$80 - 9y = 6y$$

$$+9y \quad +9y$$

$$\frac{80}{15} = \frac{15y}{15}$$

$$y = \frac{80 \div 5}{15 \div 5}$$

$$y = \frac{16}{3}$$

## Combine Like Terms First

\*Simplify each side first

$$\begin{array}{r}
 \underline{5x} + 4 - \underline{3x} = 3x + 8 \\
 2x + 4 = 3x + 8 \\
 -2x \qquad \qquad -2x \\
 4 = x + 8 \\
 -8 \qquad \qquad -8 \\
 \textcircled{-4 = x} \quad \text{OR} \quad \textcircled{x = -4}
 \end{array}$$

## Summary

**EQ:** How do you get the variable onto one side?

simplify first  
 then + or -  
 to get variable  
 on one side

# 3.4 Homework

3.4 Day 1 HW

---

p.157 #12-21,  
25-30,33-36