Must Do

Solve the equation

$$2x - 14 = 6 - 3x$$

$$x = 4$$

• Solve the equation when a = 7x by substitution

$$7 + a = -2x - 11$$

$$x = -2$$
$$a = -14$$

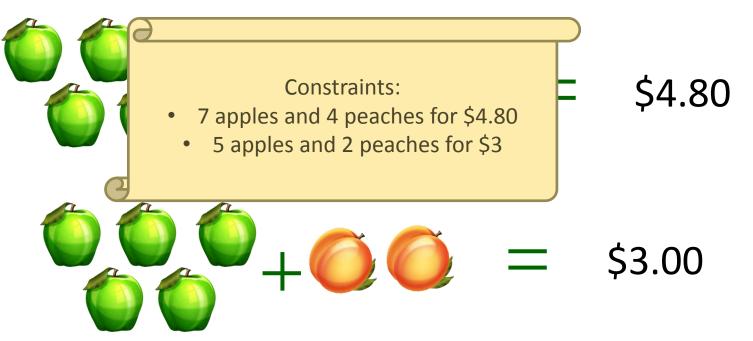
Math 8C Unit 4 – Day 10

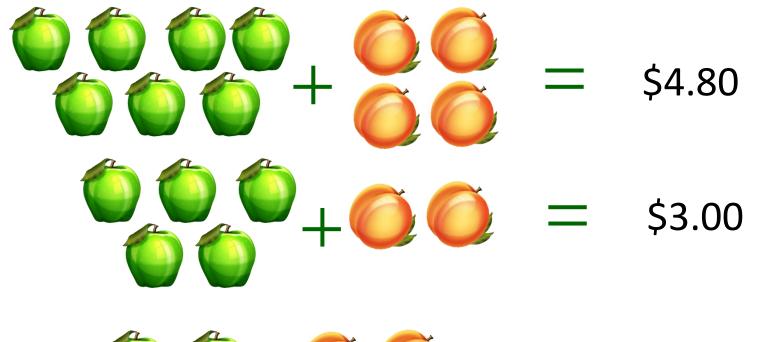
Standards:

- ✓ Identify constraints and write a system of equations for a context.
 - ✓ Use substitution to solve a system of equations.

Symbolic Representations

 At the local Farmer's Market, you bought 7 apples and 4 peaches for \$4.80. Your friends bought 5 apples and 2 peaches for \$3.00. When you got home, your sister asked how much each fruit cost. You didn't remember but you can use mathematics to figure it out! What are the constraints?







$$0 + 0 = $0.90$$

$$0000 = $1.20$$
 $0 = 0.40 $0 = 0.50

The Substitution Method

 Things that are equal to the same thing are equal to each other.

• Transitive Property of Equality If a = b, and b = c, then a = c

• Reflexive Property of Equality
If x = y then y = x

Example

Solve the system of equations using substitution.
 (find x and y)

$$y = -x - 7$$
$$5y + 3x = -13$$

$$x = -11$$
$$y = 4$$
Solution: $(-11, 4)$

Example

$$y = 6x - 11$$

$$-2x - 3y = -7$$

$$x = 2$$

 $y = 1$
Solution: (2, 1)

You Try!

$$2x - 3y = -1$$

$$y = x - 1$$

$$x = 4$$

$$y = 3$$
Solution: (4, 3)

Example

$$-4x + y = 6$$

$$-5x - y = 21$$

$$x = -3$$
$$y = -6$$
Solution: $(-3, -6)$

You Try!

$$-7x - 2y = -13$$
$$x - 2y = 11$$

$$x = 3$$
$$y = -4$$
Solution: $(3, -4)$

In Class Practice

U4D10 - ICP