

## Stick Quiz

1. Use substitution to solve the system of equations.

$$3x + y = 6$$

$$4x + 2y = 8$$

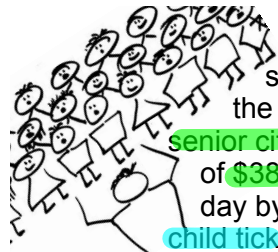
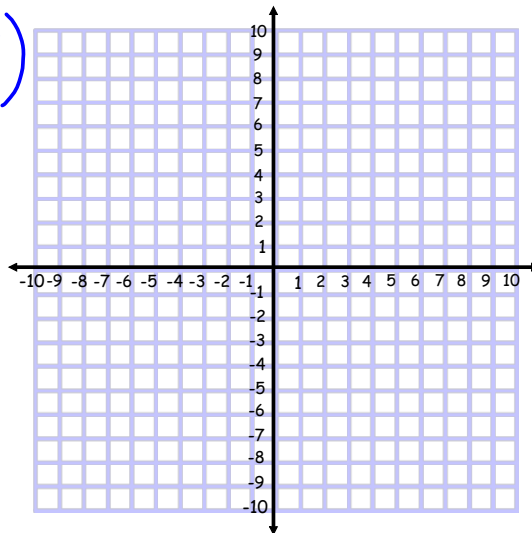
$$(2, 0)$$

2. Solve the system of equations by graphing.

$$y = 2x + 1$$

$$y = -x - 2$$

$$(-1, -1)$$



The school that Stefan goes to is selling tickets to a choral performance. On the first day of ticket sales the school sold **3 senior citizen tickets** and **1 child ticket** for a total of **\$38**. The school took in **\$52** on the second day by selling **3 senior citizen tickets** and **2 child tickets**. Find the **price of a senior citizen ticket** and the **price of a child ticket**.

Let  $x$  be the price of senior tickets.  
Let  $y$  be the price of children's tickets.

$$3x + 1y = 38$$

$$\begin{array}{r} -3x \\ -3x \end{array}$$

$$y = (-3x + 38)$$

$$\begin{array}{r} 3(8) + y = 38 \\ 24 + y = 38 \\ -24 \quad -24 \\ \hline y = 14 \end{array}$$

$$y = 14$$

$$(8, 14)$$

$$3x + 2y = 52$$

$$3x + 2(-3x + 38) = 52$$

$$3x - 6x + 76 = 52$$

$$\begin{array}{r} -3x + 76 = 52 \\ -76 \quad -76 \\ \hline -3x = -24 \end{array}$$

$$\frac{-3x}{-3} = \frac{-24}{-3}$$

$$x = 8$$

Senior tickets are \$8, and kids are \$14.

? ? Questions ?  
? on ? ? ?  
? Homework ?  
? ? ?  
? ? ?

**LESSON** 6-3 **Elimination Using Addition and Subtraction**

**I can...** solve systems of equations using elimination and apply this to real world situations.



2. Use elimination to solve the system of equations.

$$\begin{array}{r} 3x - 5y = 1 \\ + 2x + 5y = 9 \\ \hline 5x + 0 = 10 \\ 5x = 10 \end{array}$$

1. Line up x's and y's
2. Make additive inverses
3. Create big addition problem



You Try!!

Use elimination to solve the system of equations.

3.  $p + q = -2$

$$p - q = 8$$

**(3, -5)**



4. Four times one number minus three times another number is 12. Two times the first number added to three times the second number is 6. Find the numbers.



5. Use elimination to solve the system of equations.

$$\begin{array}{r}
 3 \cdot \cancel{2x} + 3 \cdot \cancel{y} = 3 \cdot \cancel{14} \\
 4x - 3y = 18 \\
 + 6x + 3y = 42 \\
 \hline
 10x + 0 = 60 \\
 10x = 60 \\
 \frac{10}{10} \quad \frac{10}{10} \\
 x = 6
 \end{array}$$

$$\begin{array}{r}
 2x + y = 14 \\
 2(6) + y = 14 \\
 12 + y = 14 \\
 -12 \quad -12 \\
 \hline
 y = 2
 \end{array}$$

1. Line up x's and y's
2. Make additive inverses
3. Create big addition problem

$$\begin{array}{l}
 (6, 2) \text{ check:} \\
 4x - 3y = 18 \\
 4(6) - 3(2) \stackrel{?}{=} 18 \\
 24 - 6 = 18 \checkmark
 \end{array}$$



## 5. Use elimination to solve the system of equations.

$$\overset{-2}{2}x + \overset{-2}{y} = \overset{-2}{14}$$

$$4x - 3y = 18$$

$$+ \overset{-4}{-4}x - \overset{-2}{-2}y = \overset{-2}{-28}$$

---

1. Line up x's and y's
2. Make additive inverses
3. Create big addition problem



$$2 = 2$$

$$\overset{3}{2} + \overset{3}{3} = \overset{3}{5}$$

$$6 + 9 = 15$$

$$\overset{3}{2} + \overset{3}{3} = \overset{3}{5}$$

$$6 + 9 = 15$$

## 6. Use elimination to solve the system of equations.

$$4(x + 2y) = 8$$

$$4x + 4y = 12$$

$$4x + 8y = 8$$

$$+ \begin{array}{r} -4x \\ -4y \end{array} = -12$$

$$0 + 4y = -4$$

$$\frac{4y}{4} = \frac{-4}{4}$$

$$y = -1$$

1. Line up x's and y's

2. Make additive inverses

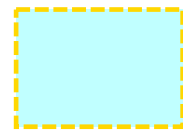
3. Create big addition problem

$$4x + 4(-1) = 12$$

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

$$\begin{array}{r} 4x = 16 \\ \frac{4}{4} \quad \frac{16}{4} \\ x = 4 \end{array}$$

(4, -1)



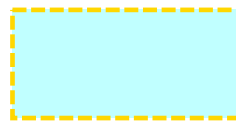
You Try!!

Use elimination to solve the system of equations.

7.  $4a + b = 2$

$$4a + 3b = 10$$

(-1/2, 4)



8.  $x - y = -8$

$$7x + 5y = 16$$

(-2, 6)



9. **RENTALS** A hardware store earned \$956.50 from renting ladders and power tools last week. The store charged 36 days for ladders and 85 days for power tools. This week the store charged 36 days for ladders, 70 days for power tools, and earned \$829. How much does the store per day for ladders and for power tools?



10. **FUNDRAISING** For a school fundraiser, Marcus and Anisa participated in a walk-a-thon. In the morning, Marcus walked 11 miles and Anisa walked 13. Together they raised \$523.50. After lunch, Marcus walked 14 miles and Anisa walked 13. In the afternoon they raised \$586.50. How much did each raise per mile of the walk-a-thon?





DUE: 6.2 Bkpgs  
Information on Two Caterer's

# Homework 6.3

Pg. 354

#7-27o, 30

**Write Equations for Caterer's and solve  
by substitution.**