

Name: \_\_\_\_\_

Date: \_\_\_\_\_

Notes

Algebra Section 7.1

Pages 427-433



**Goal:** "You will graph and solve systems of linear equations"

**Remember:**

A \_\_\_\_\_ to a \_\_\_\_\_ is any \_\_\_\_\_ that when \_\_\_\_\_ in makes the \_\_\_\_\_ true.

**Vocabulary:**

**System of Equations** – two (or more) \_\_\_\_\_ with the same \_\_\_\_\_.

**Solution to a system of equations** – any \_\_\_\_\_ that is a \_\_\_\_\_ to \_\_\_\_\_ equations.

The \_\_\_\_\_ to a linear equation is where the two lines \_\_\_\_\_.

**Decide if the given point is a solution to the system of equations:**

**Ex:**  $x + y = -2$   
 $x + 5y = 2$   
 $(-3, 1)$

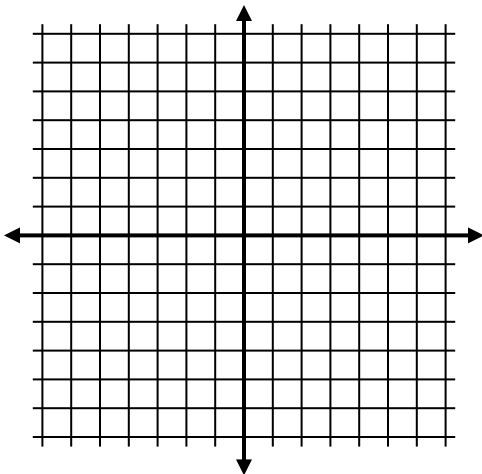
**Ex:**  $2x - 3y = 4$   
 $2x + 8y = 11$   
 $(5, 2)$

**Ex:**  $6x + 5y = -7$   
 $x - 2y = 0$   
 $(-2, 1)$

**Solve by graphing:**

**Ex:** Graph the following lines in the same coordinate plane. Identify the solution to the system:

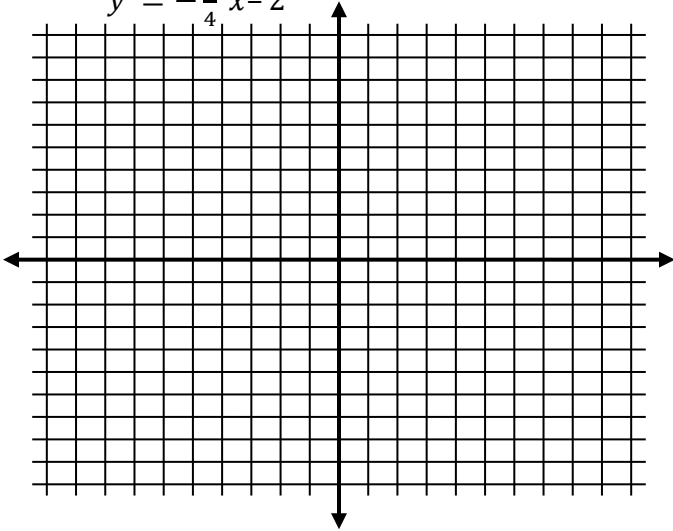
$y = x + 3$  and  $y = -\frac{2}{3}x - 2$



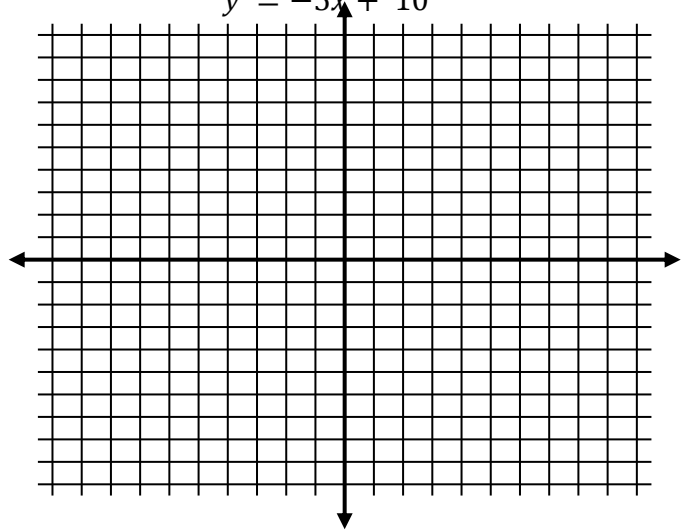
What is the solution to the system? How do you know?

Solve each of the following systems by graphing. Be sure to state the solution. Check your solution on Desmos.

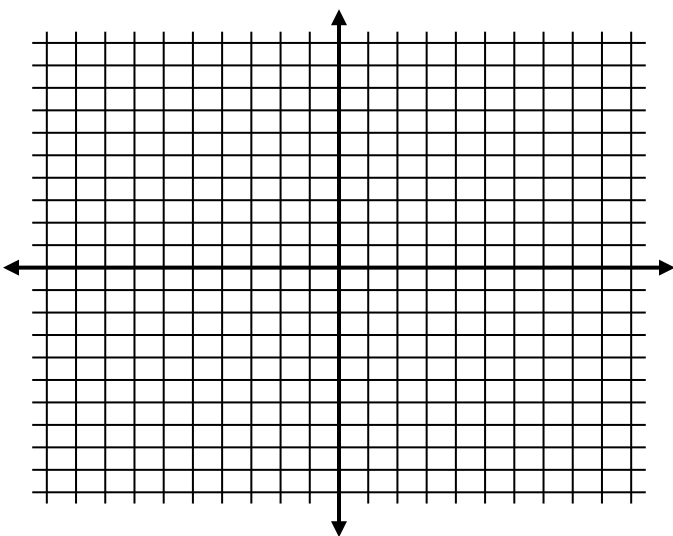
Ex:  $y = x - 7$   
 $y = -\frac{1}{4}x - 2$



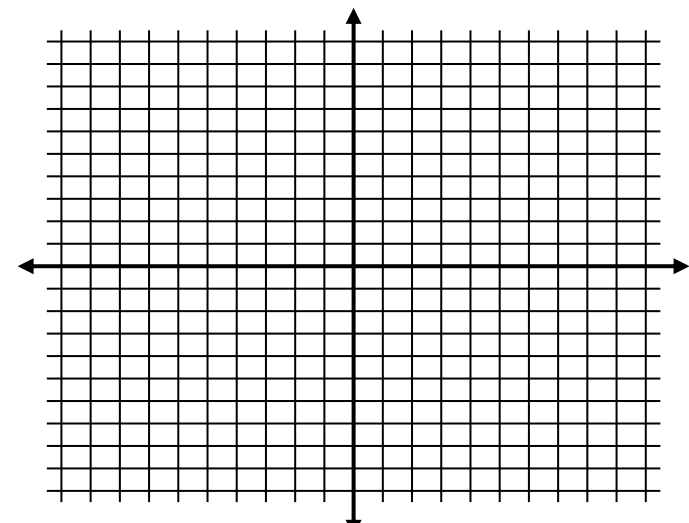
Ex:  $y = 5x$   
 $y = -5x + 10$



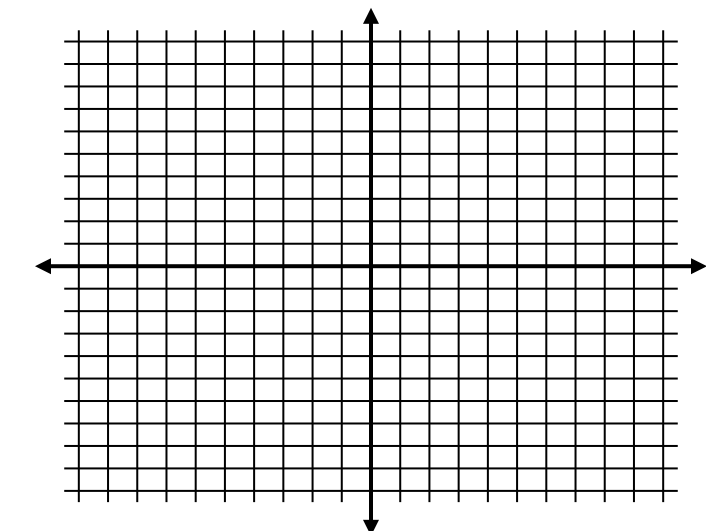
Ex:  $y = \frac{1}{2}x + 3$   
 $y = -x - 3$



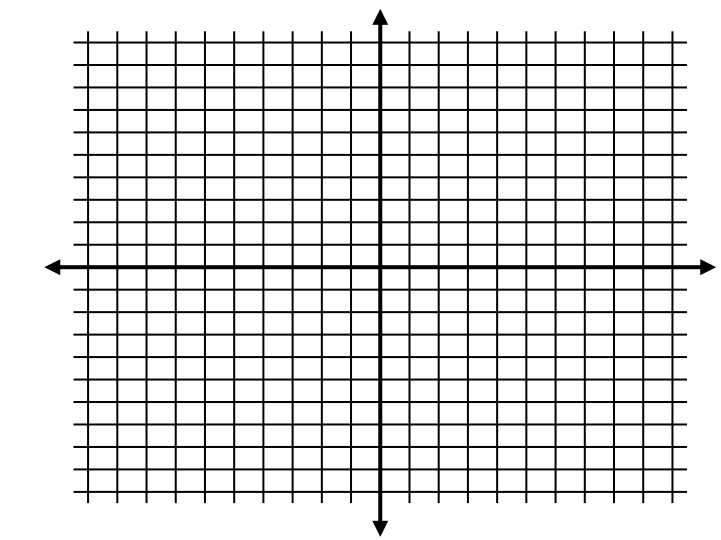
Ex:  $y = x - 5$   
 $y = -3x + 3$



Ex:  $y = 2x + 5$   
 $y = -\frac{1}{2}x$

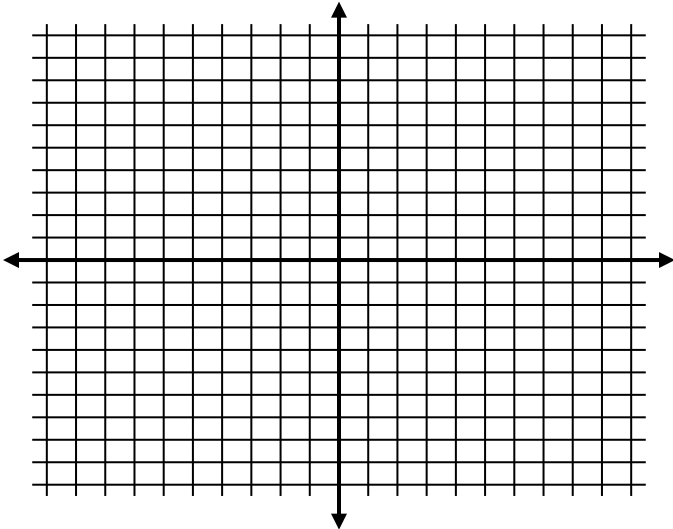


Ex:  $y = x + 5$   
 $y = -2x + 8$

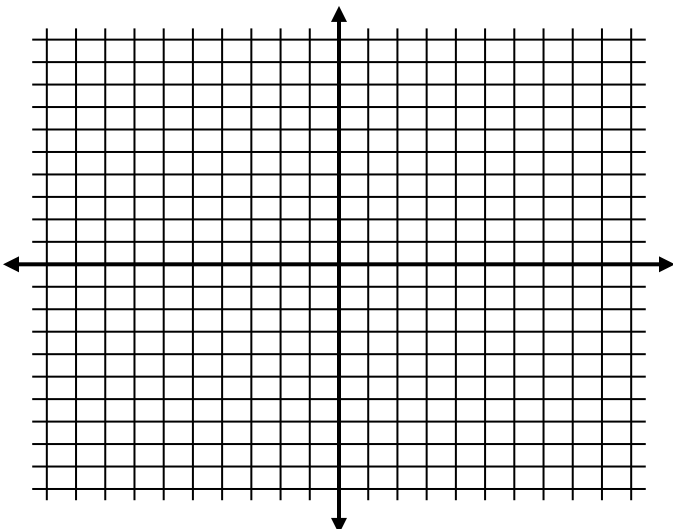


Solve each of the following systems by graphing. Be sure to state the solution. Write each in slope-intercept form first. Check your solution on Desmos.

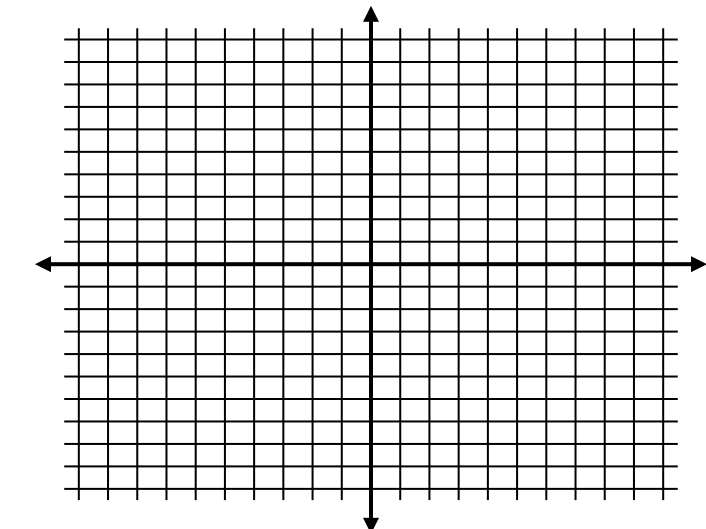
**Ex:**  $-x + y = -7$   
 $x + 4y = -8$



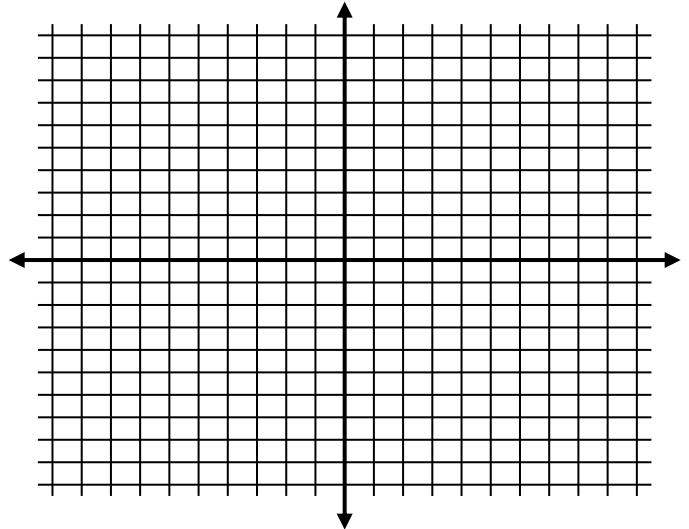
**Ex:**  $-4x + 2y = 8$   
 $2x + y = 4$



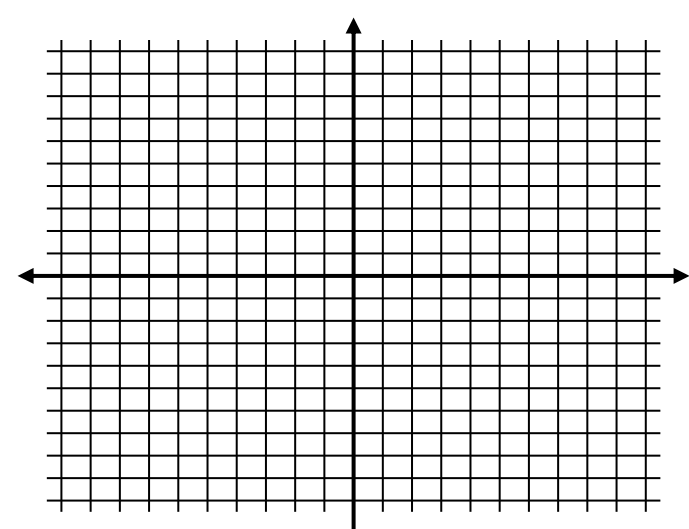
**Ex:**  $2x + 2y = 4$   
 $-x + 2y = -8$



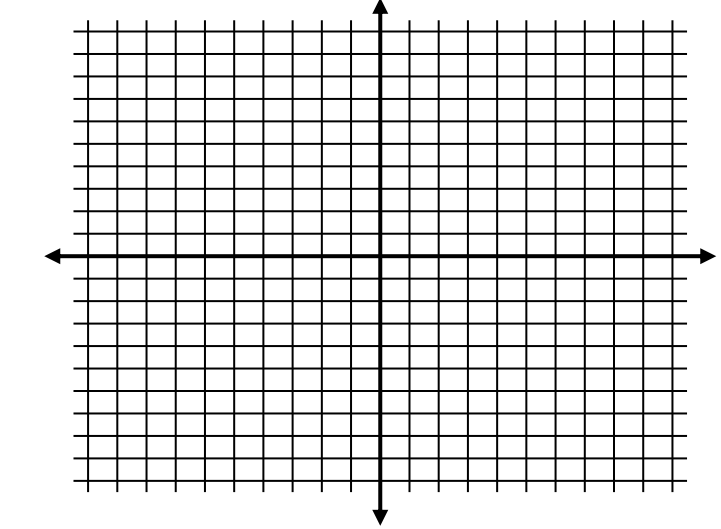
**Ex:**  $-5x + y = 0$   
 $5x + y = 10$



**Ex:**  $x - y = 5$   
 $3x + y = 3$



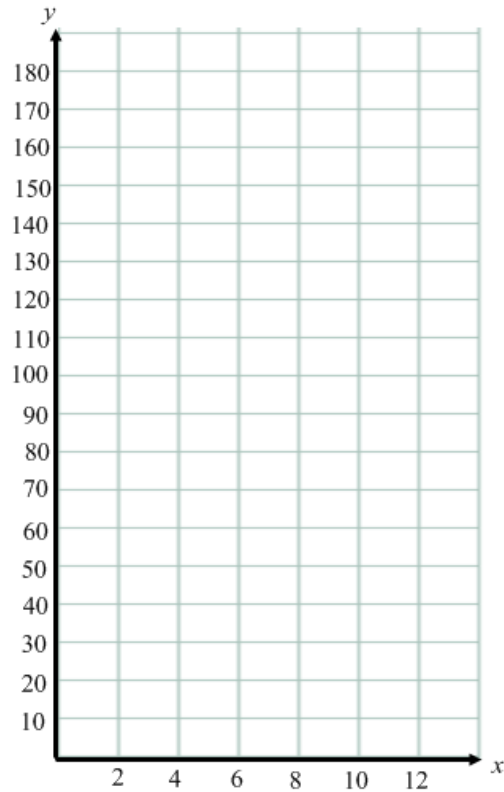
**Ex:**  $-x + y = 5$   
 $2x + y = 8$



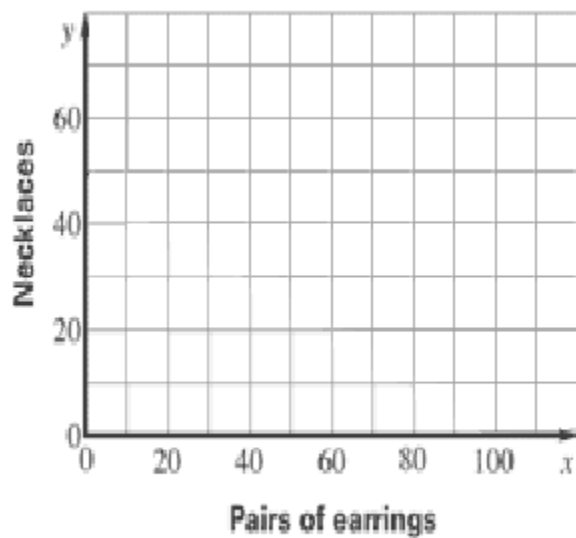
**Ex:** The parks and rec. department offers a seasons pass for \$90. With a pass you pay \$4 per session to use the tennis courts and without the pass you pay \$13 per session.

- a. Write a system of linear equations to describe the situation. (The total cost with and without a based on the number of times you use the tennis courts)

- b. Solve the system by graphing.



**Ex:** You sell earrings for \$5 and necklaces for \$10 and want to make \$500. You also want to sell 60 items total. Write a system of equations to describe the total number of necklaces and earrings sold.



**Ex:** A business rents inline skates for \$15 per day and bicycles for \$30 per day. During one day the business does a total of 25 rentals and makes \$450. Write and solve a system of equations by graphing to find the number of in-line skates and bicycles rented.

