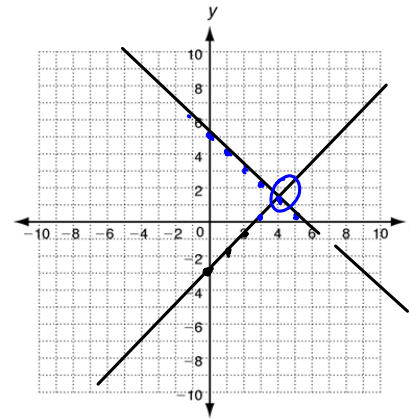


1. Tell whether $(5, 2)$ is a solution of

$$\begin{cases} x + 3y = 11 & \checkmark & 5 + 3(2) = 11 \\ 2x - y = 3 & \times & 2(5) - 2 = 10 - 2 = 8 \end{cases}$$

2. Solve $\begin{cases} y = x - 3 \\ y = -x + 5 \end{cases}$ by graphing.



3. Solve by substitution: $\begin{cases} y = 10 + x \\ 2x + y = 4 \end{cases}$

$$\begin{aligned} y &= 10 + (-2) \\ y &= 8 \end{aligned}$$

$$\begin{array}{r} y = -2x + 4 = 10 + x \\ -x - 4 = 10 + x \\ \hline -3x = 14 \\ x = -\frac{14}{3} \end{array}$$

$$(-2, 8)$$

4. Solve by elimination: $\begin{cases} x - 2y = -7 \\ 4x + 2y = 22 \end{cases}$

$$\begin{array}{r} x - 2y = -7 \\ -3 \quad -3 \\ \hline -2y = -10 \\ -2 \quad -2 \\ \hline y = 5 \end{array} \quad \begin{array}{r} 5x = 15 \\ \hline x = 3 \end{array}$$

$$(3, 5)$$

6. Solve by any method: $\begin{cases} y - 3x = 2 \\ y = -2x - 8 \end{cases}$

Handwritten work:

$$y - 3x = 2$$

$$y = -2x - 8$$

$$(-2x - 8) - 3x = 2$$

$$-8 - 5x = 2$$

$$-5x = 10$$

$$x = -2$$

Graphed solution: $(-2, -4)$

8. How many solutions does $\begin{cases} 2x + y = 3 \\ 2y = -4x + 6 \end{cases}$ have?

Handwritten work:

$$y = -2x + 3$$

$$y = -2x + 3$$

(Note: The second equation is written as $y = -2x + 3$ with some crossed-out terms.)

9. Solve. $\begin{cases} y = \frac{1}{2}x + 5 \\ 2y = x - 24 \end{cases}$

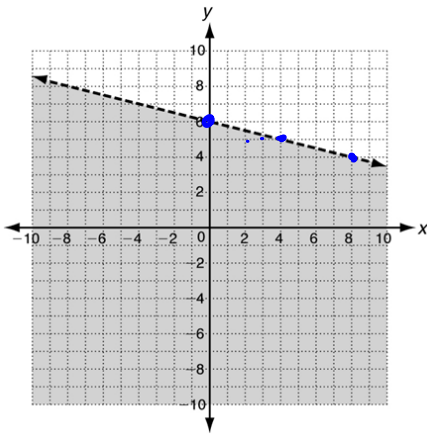
10. Tell whether $(1, 10)$ is a solution of $y > 5 + 6x$.

Handwritten work:

$$10 > 5 + 6$$

$$10 > 11$$

11. Write the inequality represented by the graph below.



$y = mx + b$
 $y < \frac{1}{4}x + 6$

12. Tell whether $(-6, 0)$ is a solution of

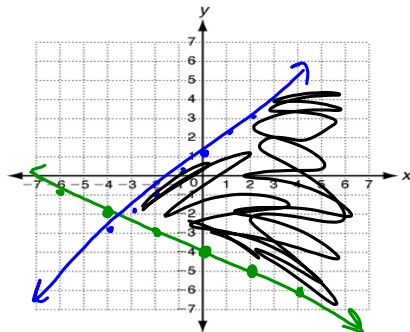
$$\begin{cases} y > x + 4 & 0 > -6 + 4 & 0 > -2 \\ y < -2x & 0 < -2(-6) & 0 < 12 \end{cases}$$

0



13. Graph. $\begin{cases} y \geq -\frac{1}{2}x - 4 \\ y \leq x + 1 \end{cases}$

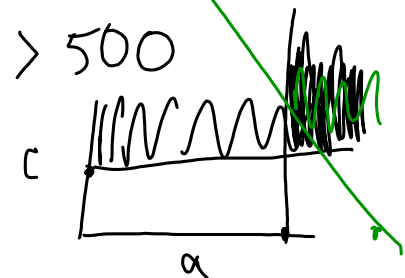
Give two ordered pairs that are solutions and two ordered pairs that are not solutions.



14. At Healthy Hair, the cost of a children's haircut x is \$4 and the cost of an adult haircut y is \$14. The manager's goal for the day is to have at least 5 children's cuts, at least 20 adult cuts, and to have total sales be greater than \$500. Write a system to represent this situation.

$c > 5$ $a \geq 20$
 $c = \text{children}$
 $a = \text{adult.}$

\$ $4c + 14a > 500$



5. Tank A contains 35 gallons of water and is increasing at a rate of 5 gallons per minute. Tank B contains 100 gallons of water and is decreasing at a rate of 8 gallons per minute. In how many minutes will the tanks contain the same amount of water? How much water will that be?