

Name:	Date:
Topic/Objective: 6.6 Solve systems of linear inequalities	Class/Period:

**Questions/Main Ideas:**

Steps to Graph a systems of linear Inequalities

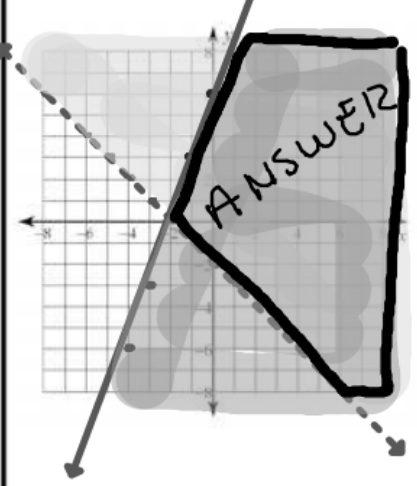
Step 1: Graph both inequalities on the same plane.

Step 2: Determine the area where the shading overlaps and write the word "ANSWER"

**Notes:**

Graph the system of inequalities:  

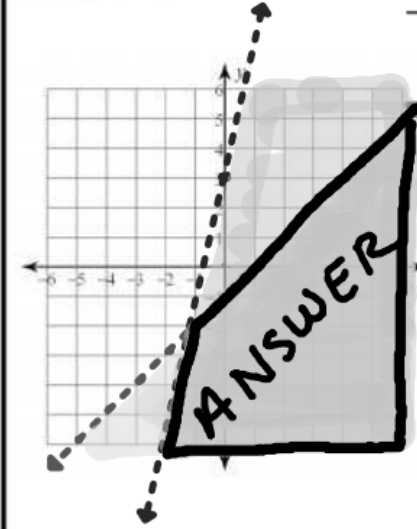
$$\begin{cases} y > -x - 2 \\ y \leq 3x + 6 \end{cases}$$



$y > -x - 2$   
 choose (0,0)  
 $0 > -2$   
 True; shaded

$y \leq 3x + 6$   
 choose (0,0)  
 $0 \leq 6$   
 True; shaded

Graph the system of inequalities  
 $x - y > 1$   
 $5x - y > -3$



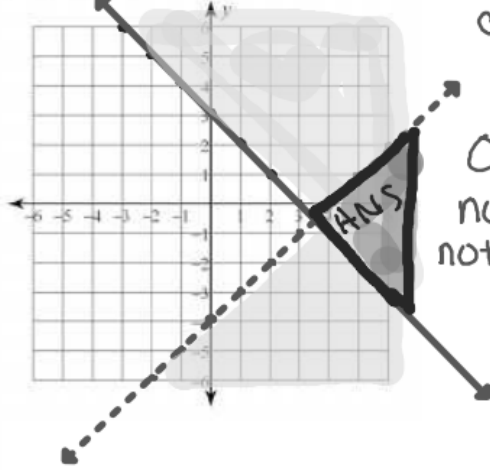
$x - y > 1$   
 $\frac{-x}{-x} \quad \frac{-x}{-x}$   
 $\frac{-y}{-1} > \frac{-x+1}{-1}$   
 $y < x - 1$   
 choose (0,0)  
 $0 < -1$   
 not true  
 not shaded

$5x - y > -3$   
 $\frac{-5x}{-5x} \quad \frac{-5x}{-5x}$   
 $\frac{-y}{-1} > \frac{-5x-3}{-1}$   
 $y < 5x + 3$   
 choose (0,0)  
 $0 < 3$   
 True;  
 shaded

Guided Practice

$$y < x - 4$$

$$y \geq -x + 3$$

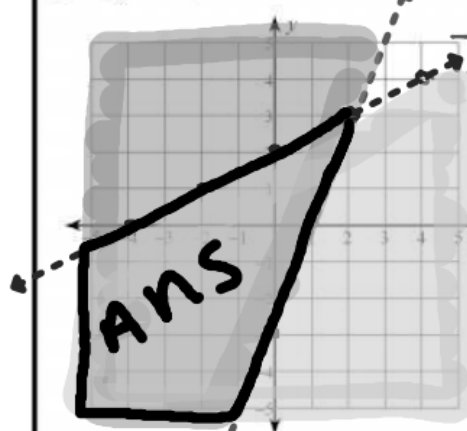


$y < x - 4$   
 choose  
 $(0,0)$   
 $0 < -4$   
 not true  
 not shaded

$y \geq -x + 3$   
 Choose  
 $(0,0)$   
 $0 \geq 3$   
 not true  
 not shaded

$$3x - y < 3$$

$$x - 2y > -4$$



$$3x - y < 3$$

$$\begin{array}{r} 3x \phantom{- y} \\ -3x \\ \hline -y < -3x + 3 \\ \phantom{-y} \phantom{<} \phantom{-3x} \phantom{+} \phantom{3} \\ \phantom{-y} \phantom{<} \phantom{-3x} \phantom{+} \phantom{3} \\ \hline -1 \phantom{<} \phantom{-3x} \phantom{+} \phantom{3} \\ \phantom{-y} \phantom{<} \phantom{-3x} \phantom{+} \phantom{3} \\ \hline \phantom{-y} \phantom{<} \phantom{-3x} \phantom{+} \phantom{3} \end{array}$$

$$y > 3x - 3$$

choose  
 $(0,0)$   
 $0 > -3$

True  
 Shaded

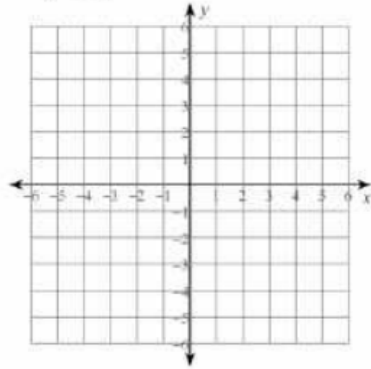
$$x - 2y > -4$$

$$\begin{array}{r} x \phantom{- 2y} \\ -x \\ \hline -2y > -x - 4 \\ \phantom{-2y} \phantom{>} \phantom{-x} \phantom{-} \phantom{4} \\ \phantom{-2y} \phantom{>} \phantom{-x} \phantom{-} \phantom{4} \\ \hline -2 \phantom{>} \phantom{-x} \phantom{-} \phantom{4} \\ \phantom{-2y} \phantom{>} \phantom{-x} \phantom{-} \phantom{4} \\ \hline \phantom{-2y} \phantom{>} \phantom{-x} \phantom{-} \phantom{4} \end{array}$$

$y < \frac{1}{2}x + 2$  choose  
 $(0,0)$  True  
 $0 < 2$  Shaded

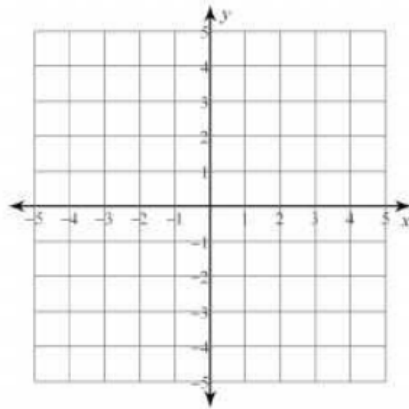
$$y < -2x + 3$$

$$y \geq 4$$



$$2x + 3y \geq -9$$

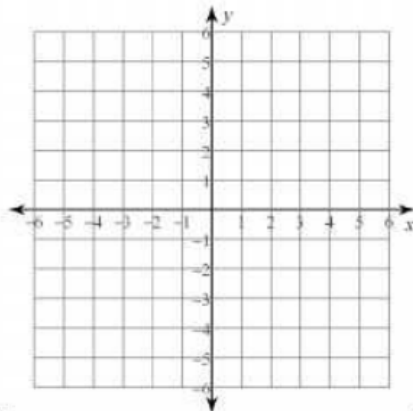
$$4x - 3y < -9$$



$$y \geq -1$$

$$x > -2$$

$$x + 2y \leq 4$$



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**Summary:**