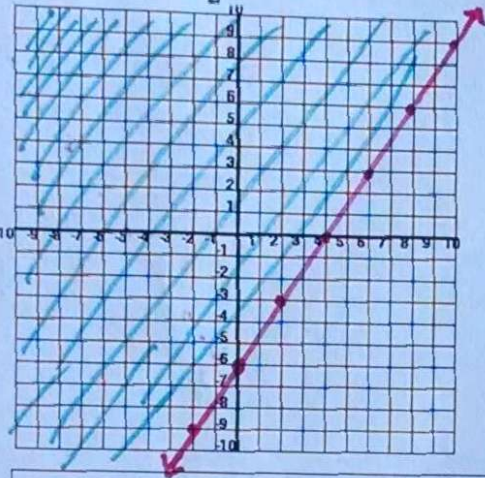
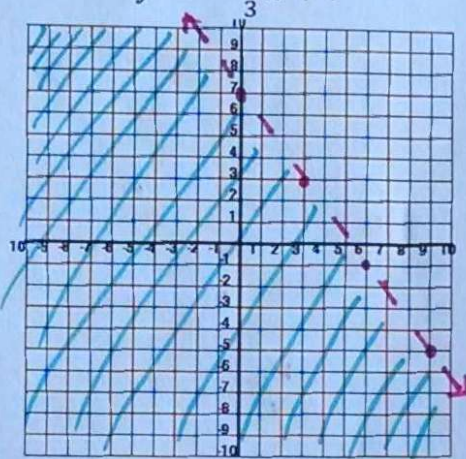


Notes: Graphing Linear Inequalities

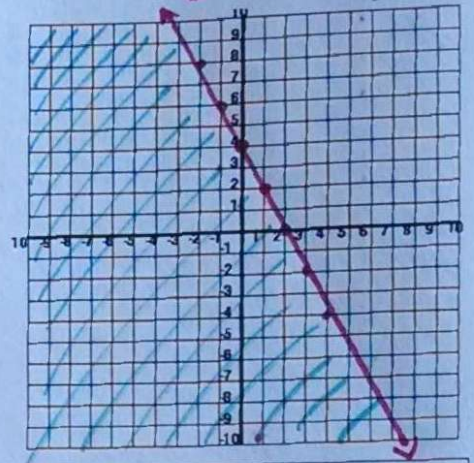
$$y \geq \frac{3}{2}x - 6$$



$$y < -\frac{4}{3}x + 7$$



$$y \leq -2x + 4$$



Solid Line or Dashed Line?

Dashed Line if $< >$ (less than or greater than)

Solid Line if $\leq \geq$ (less than or equal to greater than or equal)

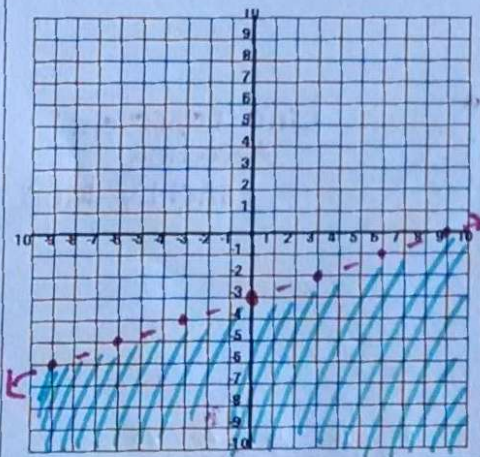
Solution INCLUDES points on the line (Solid)

Shading?

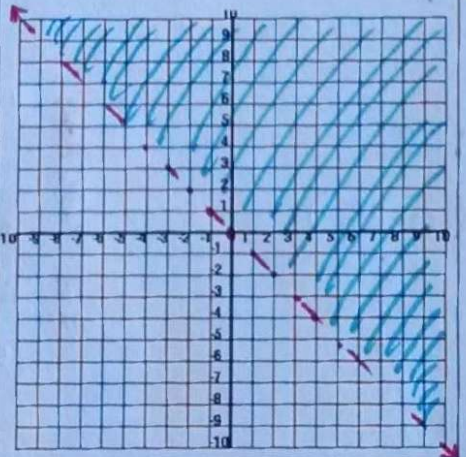
Shade Below Line if $< \leq$ (Less than Less than or =)

Shade Above Line if $> \geq$ (greater than greater than or =)

$$y < \frac{1}{3}x - 3$$

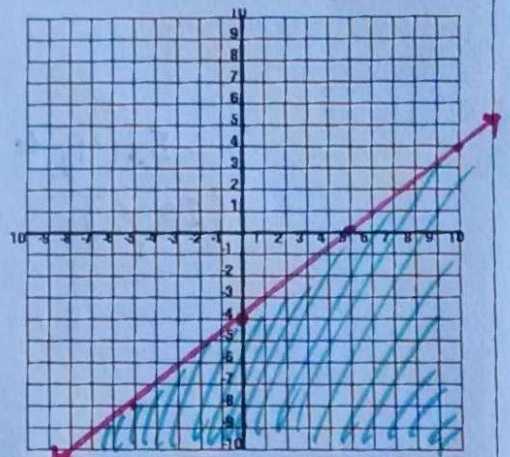


$$y > -x$$



$$4x - 5y \geq 20$$

$$\frac{-5y \geq -4x + 20}{-5} \quad y \leq \frac{4}{5}x - 4$$



Is the point $(-3, 2)$ a solution to the inequality $y > 3x + 5$?

$$2 > 3(-3) + 5$$

$$2 > -9 + 5$$

$2 > -4$ ✓
 $(-3, 2)$ is a solution

Is the point $(2, 3)$ a solution to the inequality $2x - 3y \leq -5$?

$$2(2) - 3(3) \leq -5$$

$$4 - 9 \leq -5$$

$-5 \leq -5$ ✓
 $(2, 3)$ is a solution.

Is the point $(-5, 4)$ a solution to $y > \frac{1}{3}x - 5$?

$$4 > \frac{1}{3}(-5) - 5$$

$$4 > -\frac{20}{3}$$

Solution

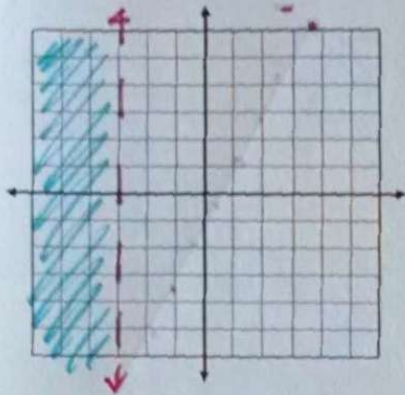
Is the point $(2, -1)$ a solution to $y > -3x + 5$?

$$-1 > -3(2) + 5$$

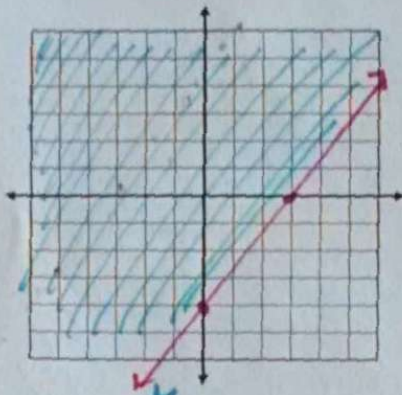
$$-1 > -1$$

No

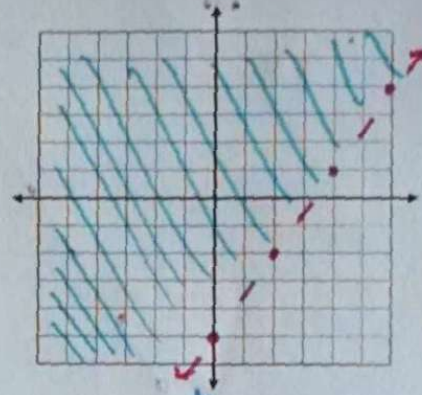
$x < -3$



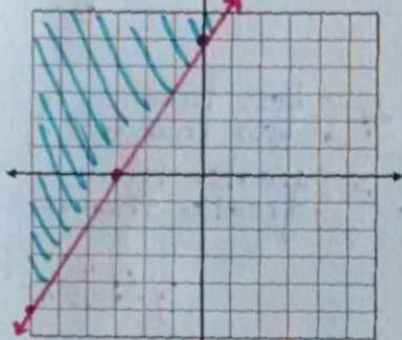
$y \geq \frac{4}{3}x - 4$



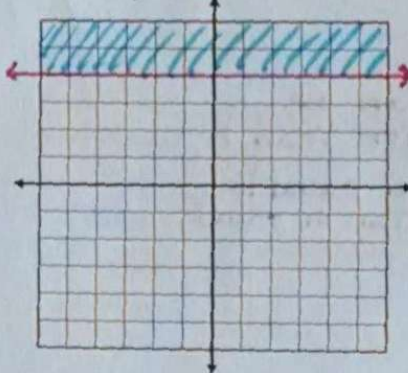
$3x - 2y < 10$



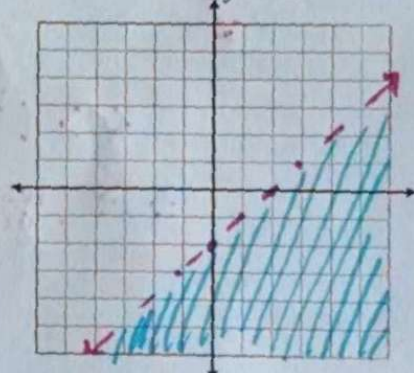
$5x - 3y \leq -15$



$y \geq 4$



$x - y > 2$

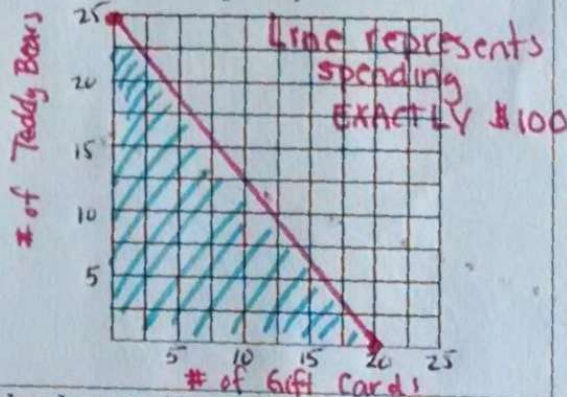


$y \geq \frac{5}{3}x + 5$

1) Jennifer would like to give \$5 gift cards and \$4 teddy bears as party favors. Fifteen people have been invited to the party. Jennifer has \$100 to spend. Write and graph an inequality to find the number of gift cards and teddy bears Jennifer can buy.

$5x + 4y = 100$

$(20, 0) \quad (0, 25)$



2) wants to donate more than \$6000 in books and shoes. Each book costs \$20 and each pair of shoes costs \$50. Write and graph an inequality to find the number of books and shoes the company should donate.

