

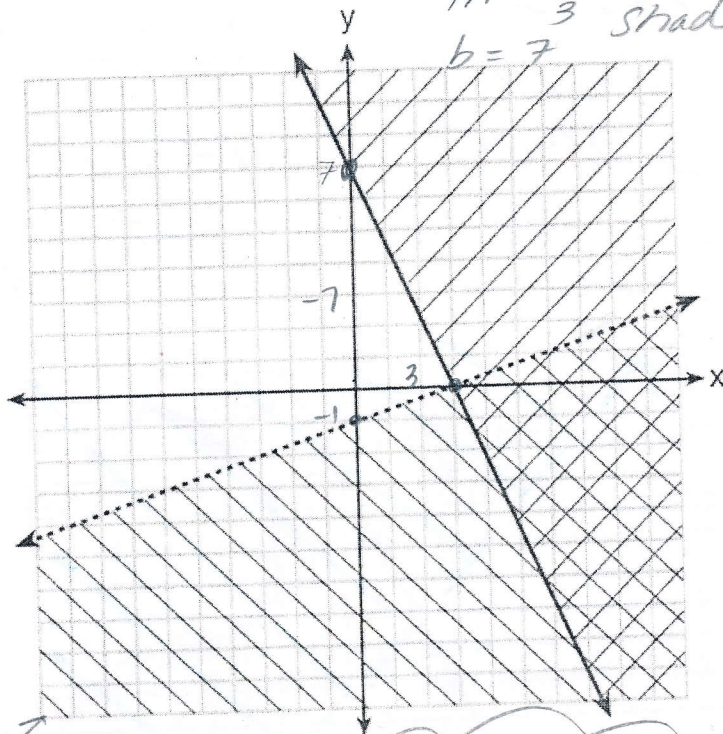
Activity: Systems of Inequalities

Name: _____

Alg. 1 H - March 6

Aim: Students will be able to graph systems of inequalities.

1. Write the system of inequalities shown in the graph below.
Label the solution set S.



$$m = \frac{1}{3}$$

$b = -1$
dotted
Shade ↓
↓

$$y \geq -\frac{7}{3}x + 7$$

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

Graph the following system of inequalities on the set of axes shown below and label the solution set S: $y + x > 2$
 $-6x + 3y \leq + 15$

Find the coordinates of one point that satisfies $y + x > 2$, but does not satisfy $-6x + 3y \leq + 15$.

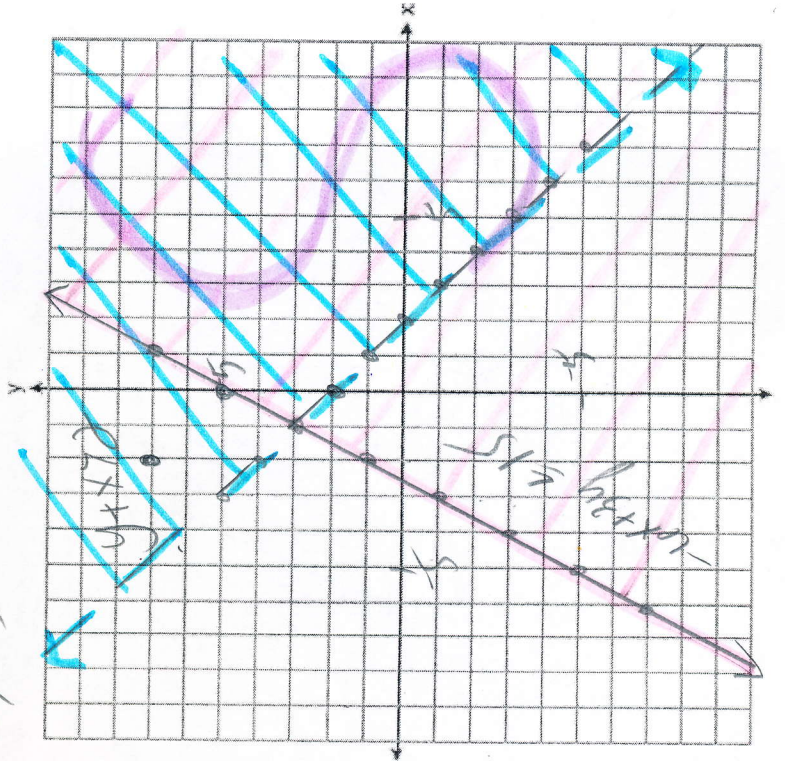
$$\begin{array}{r} y + x > 2 \\ -x - x \\ \hline y > -x + 2 \end{array}$$

$m = -\frac{1}{1}$ dotted
 $b = 2$ shaded \uparrow

$$\begin{array}{r} -6x + 3y \leq 15 \\ +6x \\ \hline 3y \leq 6x + 15 \\ \frac{3y}{3} \leq \frac{6x + 15}{3} \end{array}$$

$y \leq 2x + 5$
 $m = \frac{2}{1}$ shaded \downarrow
 $b = 5$ solid

$(-2, 7)$



3. A company manufactures bicycles and skateboards. The company's daily production of bicycles cannot exceed 10, and its daily production of skateboards must be less than or equal to 12. The combined number of bicycles and skateboards cannot be more than 16. If x is the number of bicycles and y is the number of skateboards, graph on the accompanying set of axes the region that contains the number of bicycles and skateboards the company can manufacture daily.

$$\begin{array}{r} x + y \leq 16 \\ -x \\ \hline y \leq -x + 16 \end{array}$$

$m = -\frac{1}{1}$ solid
 $b = 16$ shaded \downarrow

$x \leq 10$
 vertical line
 solid line
 shade \downarrow

$y \leq 12$
 horizontal line
 solid line
 shade \downarrow

