

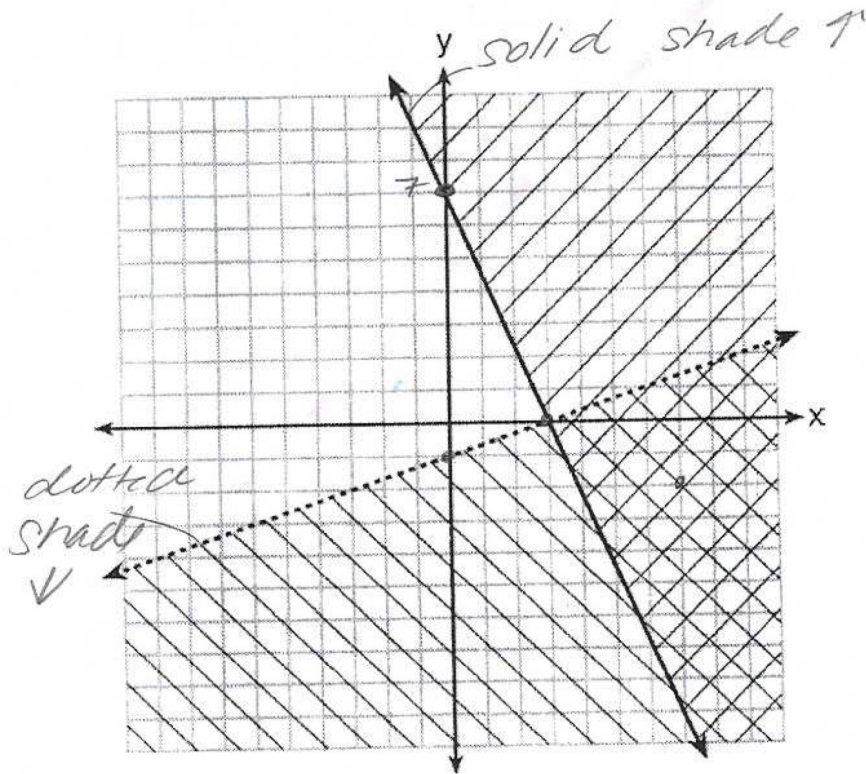
HW: Review Systems of Inequalities

Name: Key
Alg. 1 H - Feb. 6

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

Inequalities: $y \geq -\frac{2}{3}x + 7$ $m = -\frac{2}{3}$ $b = 7$
 $y < \frac{1}{3}x - 1$ $m = \frac{1}{3}$ $b = -1$

State a point in the solution set: $(7, -2)$



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

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

$$y + x > 2$$

$$y > -x + 2$$

$$m = -\frac{1}{1} \quad b = 2$$

dotted
shade \uparrow

$$-6x + 3y \leq 15$$

$$\frac{+6x}{+6x} \quad \frac{+6x}{+6x}$$

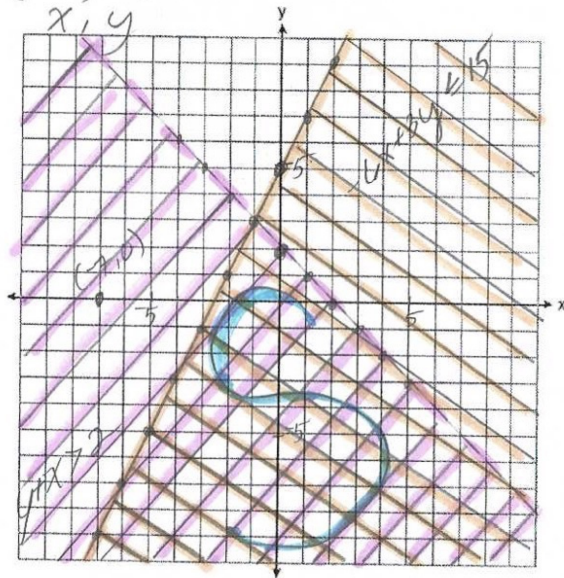
$$\frac{3y}{3} \leq \frac{+6x + 15}{3}$$

$$y \leq +2x + 5$$

$$m = +\frac{2}{1} \quad b = 5$$

solid shade \downarrow

$(-7, 0)$



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. Title the axes.

$$x \leq 10$$

$$y \leq 12$$

$$x + y \leq 16$$

$$y \leq -x + 16$$

$$m = -\frac{1}{1} \quad b = 16$$

solid

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

$y \leq 12$
horizontal line
shade \downarrow

