

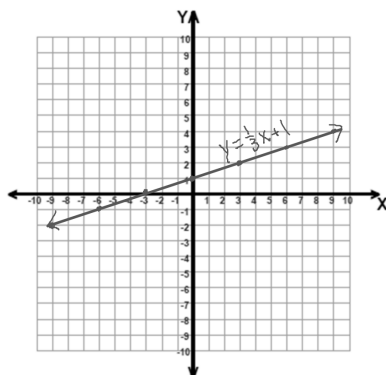
DO NOW

Graph:

$$y = \frac{1}{3}x + 1$$

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

$$b = 1$$



Page 1

4.1 Graphing Linear Inequalities

Procedure:

1. Graph the corresponding line

solid $\rightarrow \leq, \geq$

dashed $\rightarrow <, >$

2. Shade one direction

"y=" form with y on the left

above $\rightarrow >, \geq$

below $\rightarrow <, \leq$

3. Label the line using an =.

Label the shaded area with the original inequality.

* "x=" form
right $\rightarrow >, \geq$
left $\rightarrow <, \leq$

Page 2

Consider the graph:

$$y = \frac{1}{3}x + 1$$

Versus:

$$y > \frac{1}{3}x + 1$$

dashed line (no =)
above (>)

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

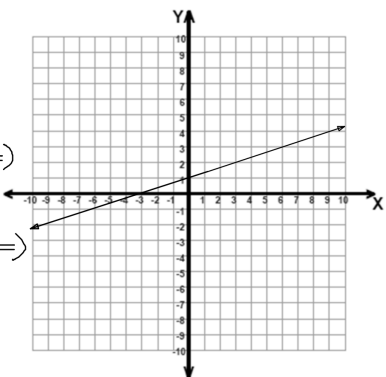
dashed line (no =)
below (<)

$$y \geq \frac{1}{3}x + 1$$

solid line (=)
above (>)

$$y \leq \frac{1}{3}x + 1$$

solid line (=)
below (<)



Page 3

1. Graph:

$$x - 4y < -12$$

$$-4y < -x - 12$$

$$y > \frac{-x - 12}{-4}$$

$$y > \frac{x}{4} + 3$$

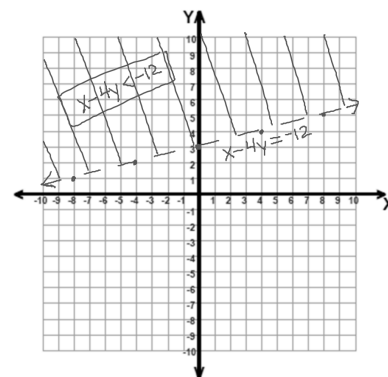
$$y > \frac{1}{4}x + 3$$

$$m = \frac{1}{4}$$

$$b = 3$$

dashed

above



Page 4

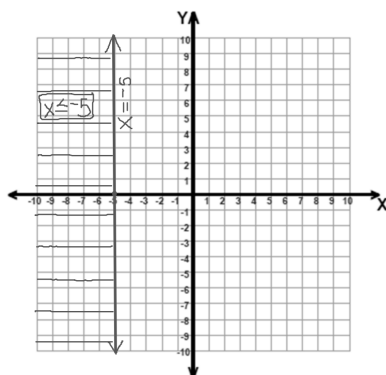
2. Graph:

$$x \leq -5$$

Vertical

Solid

below



Page 5

3. Graph:

$$y - 2 > 4$$

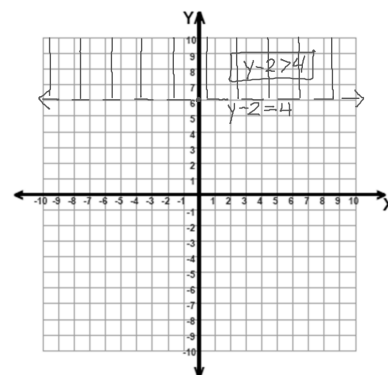
$$y > 4 + 2$$

$$y > 6$$

horizontal

dashed

above



Page 6

4. Graph

$$-x - 3y \leq -9$$

$$-3y \leq x - 9$$

$$y \geq \frac{x-9}{-3}$$

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

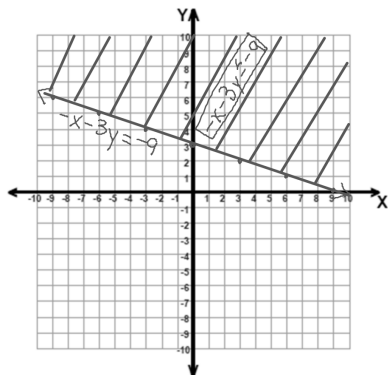
$$y \geq -\frac{1}{3}x + 3$$

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

$$b = 3 \rightarrow$$

solid

above



HOMEWORK

Worksheet - HW 4.1 Graphing Inequalities