Lesson 6-5A - Linear Inequalities

Due Today: **p.290 #17, 19, 20, 22-24**

17. (-1, -3)

19. (2, -2)

20. (10, 8)

22. (1, 5)

23. (-1, -2)

24. (15, -10)

Due Wednesday: p. 305 #1-9 odd; #11-12; 20, 22.

$3(-2x + 5y = 20)$ $\quad -6x + 15y = 60$

$2(3x - 7y = -26)$ $\quad +\ 6x - 14y = -52$

$y = 8$

$-2x + 5(8) = 20$

$-2x + 40 = 20$

$-2x = -20$

$x = 10$

23. $y = 2(x-1)$

$y = x - 1$

$2x = x - 1$

$-x \quad -x$

$x = -1$

$y = -2$

1) Solve using elimination

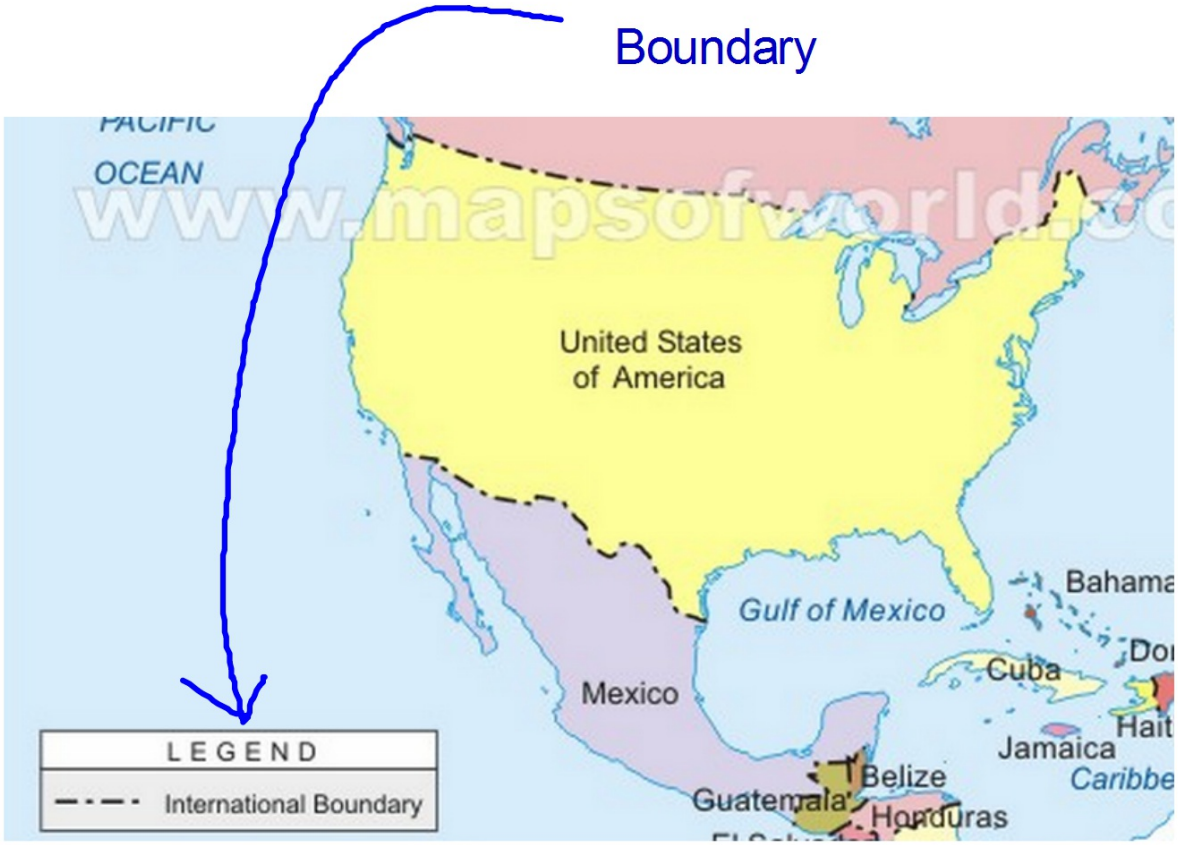
$3(2x - 3y = -11)$ $\quad 6x - 9y = -33$

$-2(3x + 2y = 29)$ $\quad -6x - 4y = -58$

$-13y = -91$

$\frac{-13y}{-13} = \frac{-91}{-13}$

$y = 7$


Boundary
OCEAN
United States
of America
Gulf of Mexico
Mexico
Cuba
Jamaica
Belize
Honduras
LEGEND
International Boundary

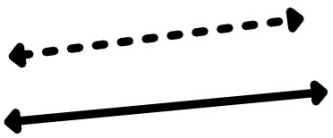
Graphing Inequalities

$y < 2x + 3$

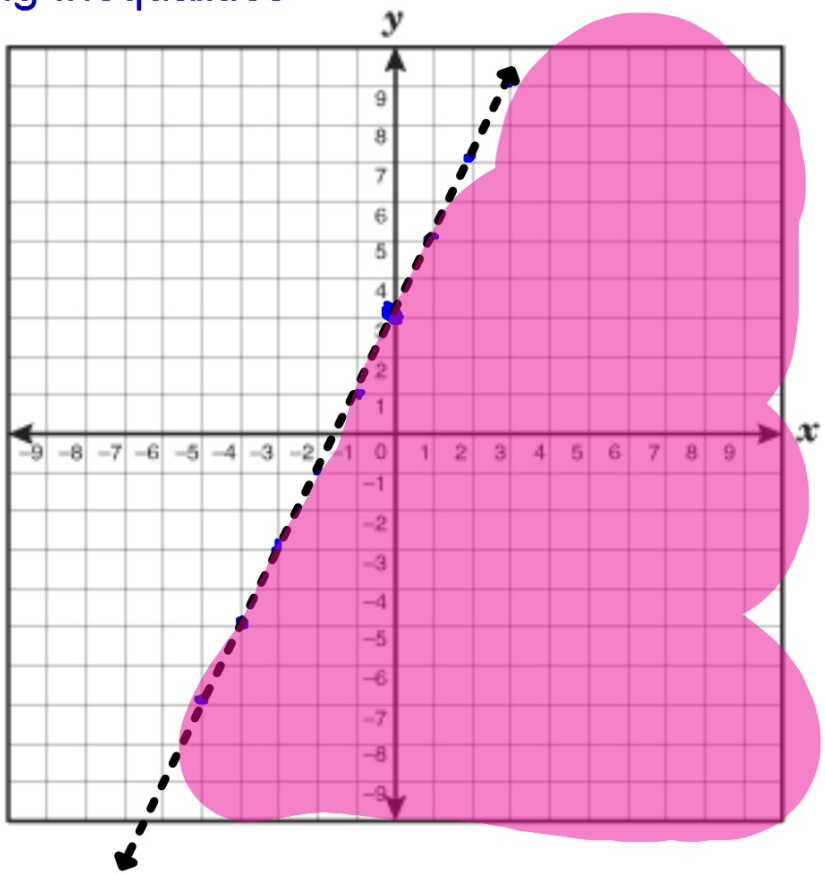
1) y=mx+b

2) Graph Boundary Line

$y = \frac{2}{1}x + 3$



3) Shade.



Review three steps for graphing inequalties

1) Put into y=mx+b (transform into slope-intercept)

2) Graph the boundary line

3) Shade

Graphing Inequalities

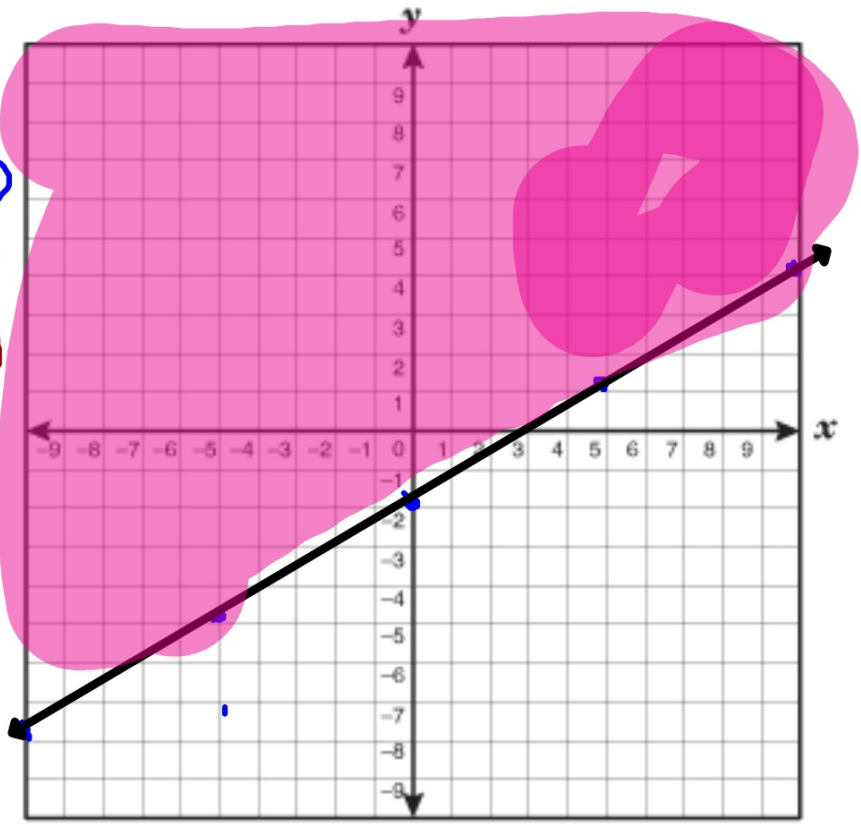
$3x - 5y \leq 10$

$-3x \quad -3x$

$-5y \leq -3x + 10$

$\frac{-5y}{-5} \leq \frac{-3x}{-5} + \frac{10}{-5}$

$y \geq \frac{3}{5}x - 2$



Is $(3, 8)$ a solution to the inequality?

x y

$$y \geq 2x - 5$$

$8 \geq 2(3) - 5$

$8 \geq 1$

yes.

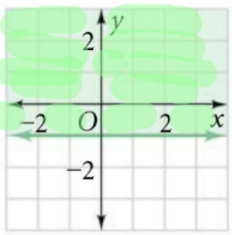
Determine whether point P is a solution of the linear inequality.

1. $y \leq -2x + 1; P(2, 2)$ **2.** $x < 2; P(1, 0)$ **3.** $y \geq 3x - 2; P(0, 0)$

4. $y > x - 1; P(0, 1)$ **5.** $y \geq -\frac{2}{5}x + 4; P(0, 0)$ **6.** $y > \frac{5}{3}x - 4; P(0, 1)$

Choose the linear inequality that describes each graph.

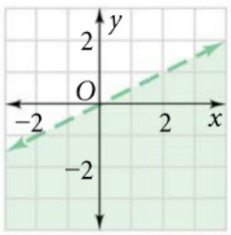
7.



A. $y \geq -1$

B. $y \leq -1$

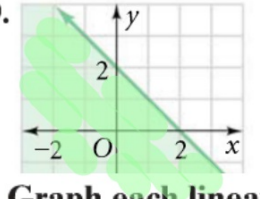
8.



A. $y > \frac{1}{2}x$

B. $y < \frac{1}{2}x$

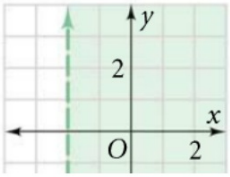
9.



A. $y \geq -x + 2$

B. $y \leq -x + 2$

10.



A. $x > -2$

B. $x < -2$

Graph each linear inequality.

11. $y \leq \frac{1}{4}x - 1$ **12.** $y \geq \frac{1}{4}x - 1$ **13.** $y < -4x - 1$ **14.** $y \geq 4x - 1$

15. $y < 5x - 5$ **16.** $y \leq \frac{2}{5}x - 3$ **17.** $y \leq -3x$ **18.** $y \geq -\frac{1}{2}x$

Write each linear inequality in slope-intercept form. Then graph the inequality.

19. $2x - 3y \geq 7$ **20.** $5x - 3y \leq 6$ **21.** $4x - 6y \geq 16$ **22.** $-4y - 6x > 8$