Algebra 1 6.6 * Ch. 5.6

Solve systems of linear inequalities by graphing

Apply systems of linear inequalities

linear inequality*

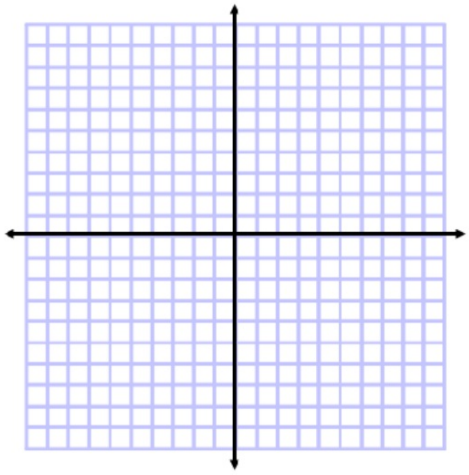
system

boundary

open

closed

Whiteboards



$0+0>2$ →

1D. ~~$x + y > 2$~~

$-4x + 2y < 8$

$y = 2x + 4$

$-4 \cdot -1 + 2 \cdot -1 < 8$

$4 + -2 < 8$

$2 < 8$

$x + y = 2$

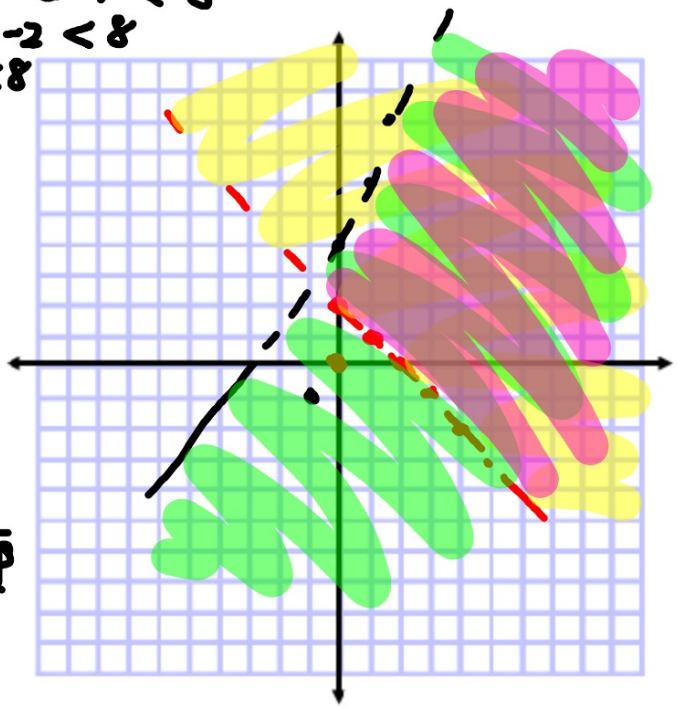
$-x \quad -x$

$y = -x + 2$

$-4x + 2y = 8$

$+4x \quad +4x$

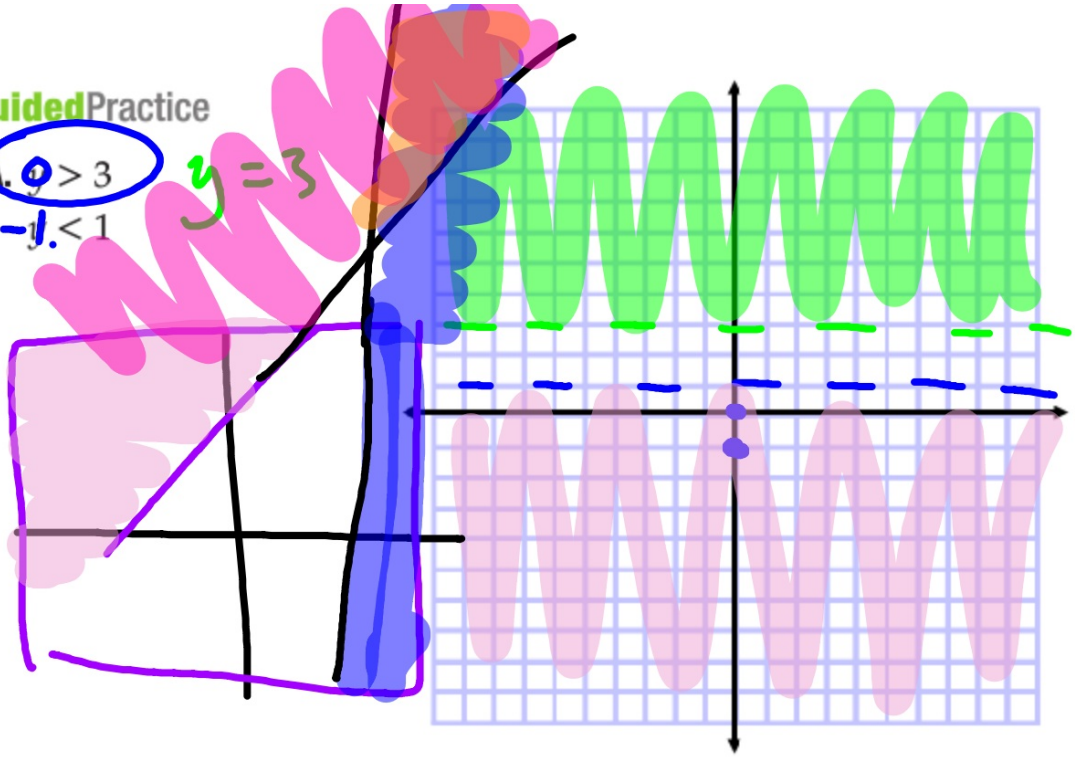
$\frac{2y}{2} = \frac{4}{2}x + \frac{8}{2}$



Guided Practice

24. $y > 3$

$-y < 1$



GuidedPractice

3. FUNDRAISING The Theater Club is selling shirts. They have only enough supplies to print 120 shirts. They will sell sweatshirts for $22 and T-shirts for $15, with a goal of at least $2000 in sales.

A. Define the variables, and write a system of inequalities to represent this situation.

B. Then graph the system.

C. Name one possible solution.

D. Is (45, 30) a solution? Explain.

x y

$x + y \leq 120$

$22x + 15y \geq 2000$

$0 + 0 \leq 120$

$0 + 0 \geq 2000$

$x + y = 120$

$-x \quad -x$

$y = -1x + 120$

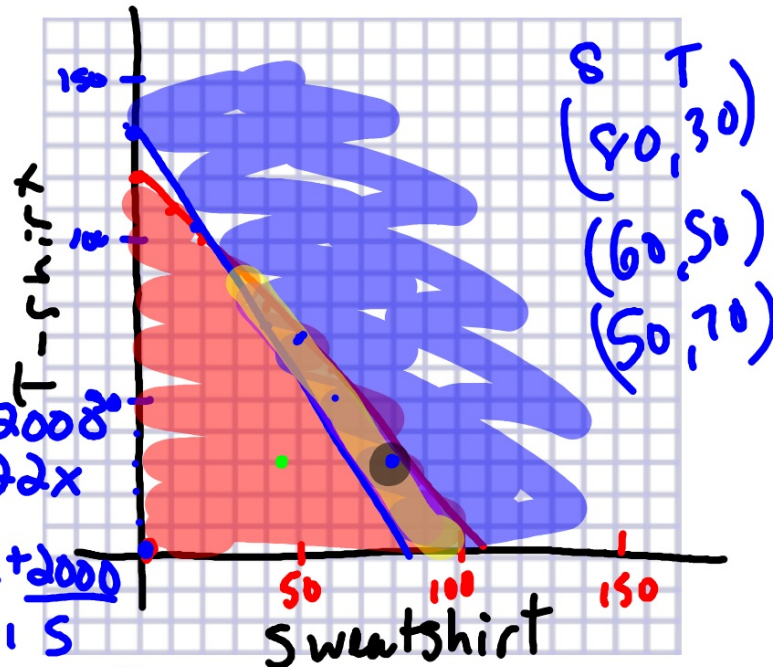
$y = -1.5x + 133$

$22x + 15y = 2000$

$-22x \quad -22x$

$\frac{15y}{15} = \frac{-22x}{15} + \frac{2000}{15}$

$-\frac{1.5}{1} \quad -\frac{15}{10} \quad -\frac{30}{20}$



S T

(50, 30)

(60, 50)

(50, 70)

26. CCSS **MODELING** Josefina works between 10 and 30 hours per week at a pizzeria. She earns $6.50 an hour, but can earn tips when she delivers pizzas.

a. Write a system of inequalities to represent the dollars d she could earn for working h hours in a week.

b. Graph this system.

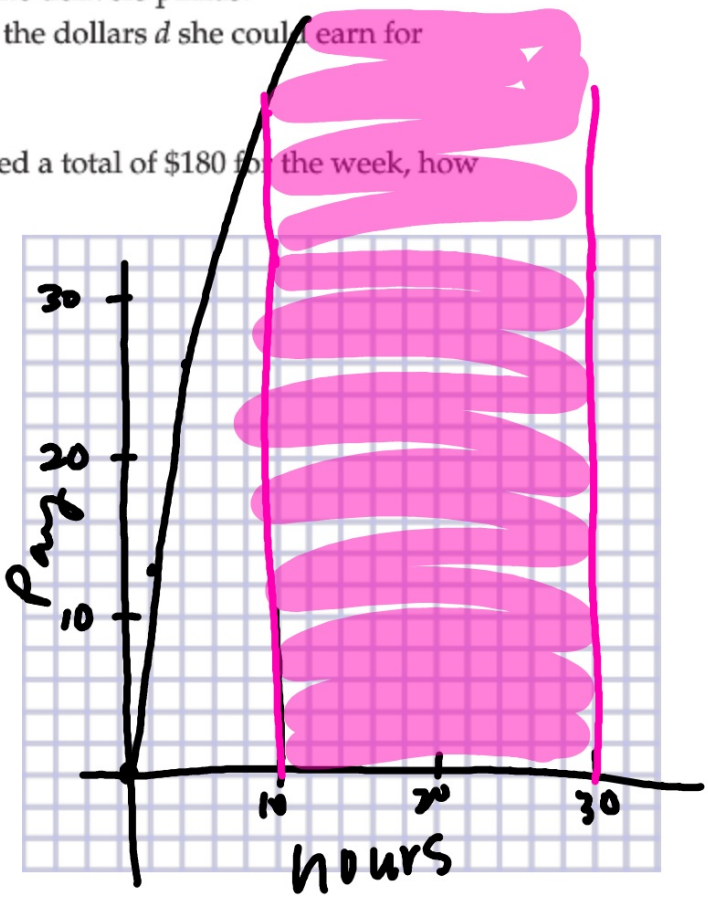
c. If Josefina received $17.50 in tips and earned a total of $180 for the week, how many hours did she work?

$10 \leq h \leq 30$

$6.50x + \text{tips}$

$p = 6.50 \cdot h + 0$

$\frac{6.5}{1} = \frac{13}{2}$



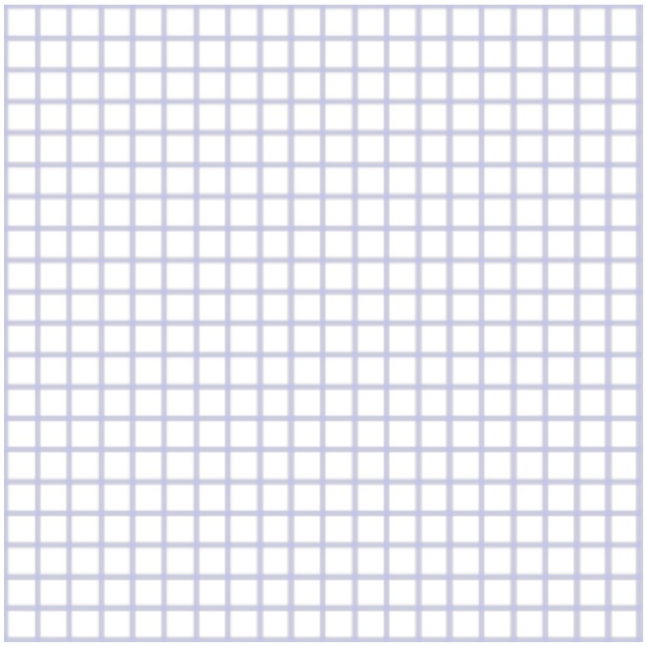
$$6.50x + 17.50 = 180$$
$$-17.50 \quad -17.50$$
$$6.50x = 162.5$$
$$x = 25$$

25. ICE RINKS Ice resurfacers are used for rinks of at least 1000 square feet and up to 17,000 square feet. The price ranges from as little as $10,000 to as much as $150,000.

a. Define the variables, and write a system of inequalities to represent this situation. Then graph the system.

b. Name one possible solution.

c. Is (15,000, 30,000) a solution? Explain.



HW = p. 374 1-6, 49-51, 56-58

2B. $x + 6y \leq 2$

$y \geq -\frac{1}{6}x + 7$