* Ch. 5.6

Algebra 1 6.6

Solve systems of linear inequalities by graphing

Apply systems of linear inequalities

linear inequality*

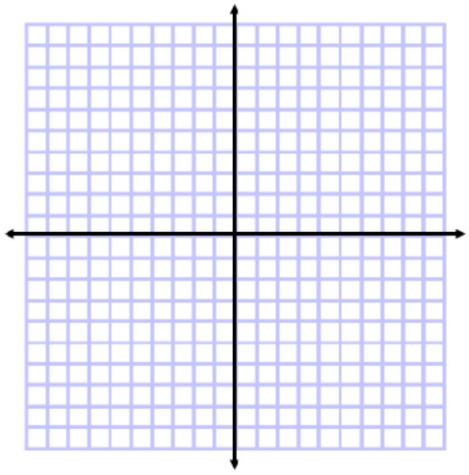
system

boundary

open $<$ $>$ - - -

closed $\leq$ $\geq$ ——————

Whiteboards



1D. $x + y > 2$

$-4x + 2y < 8$

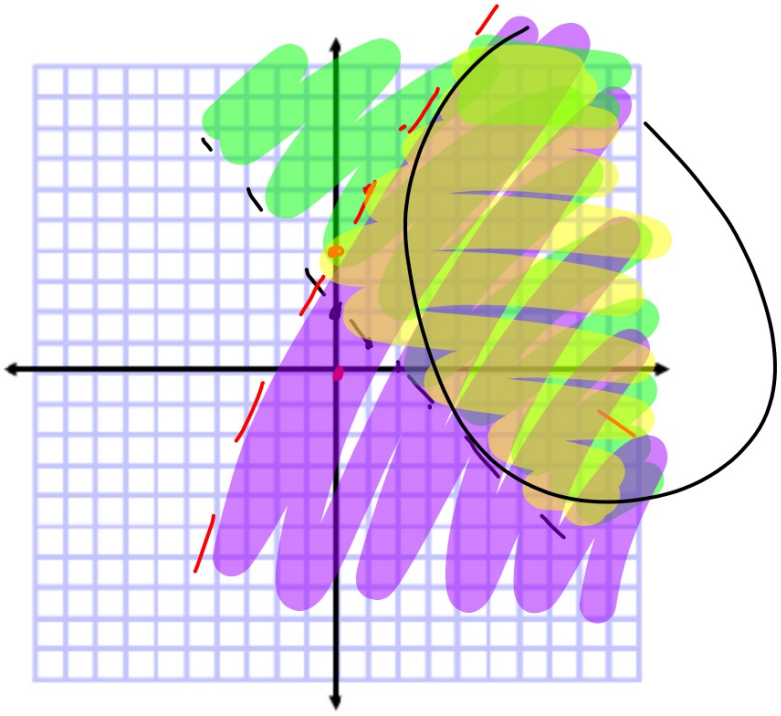
$0 < 8$

$x+y=2$

$-4x+2y=8$

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

$y = 2x+4$



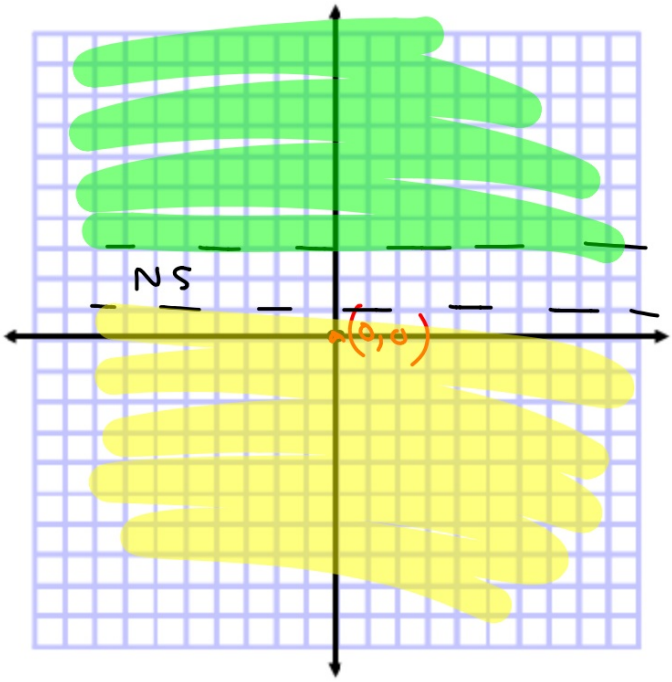
GuidedPractice

2A. $y > 3$

$y < 1$

$y = 3$

$y = 1$



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.

s t

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

y | x

B. Then graph the system.

C. Name one possible solution. 100 ss. 10 ts.

D. Is (45, 30) a solution? Explain. no

$-\frac{1.5}{1}$ $-\frac{3}{2}$ $-\frac{30}{20}$ $s + t < 120$

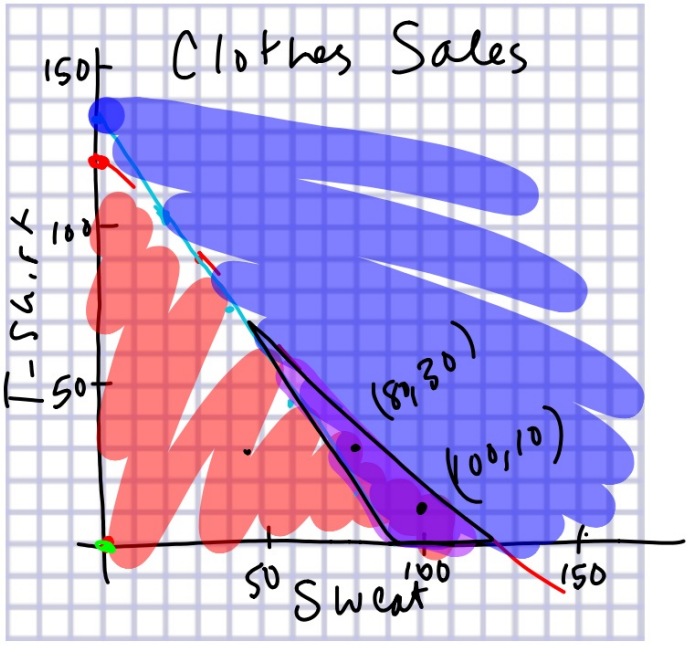
$\frac{-10}{10}$ $22s + 15t \geq 2000$

$s + t = 120$ $22s + 15t = 2000$

$-s \quad -s$ $-22s \quad -22s$

$t = -s + 120$ $\frac{15t}{15} = \frac{-22s + 2000}{15}$

$t = -1.5s + 133.3$



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.

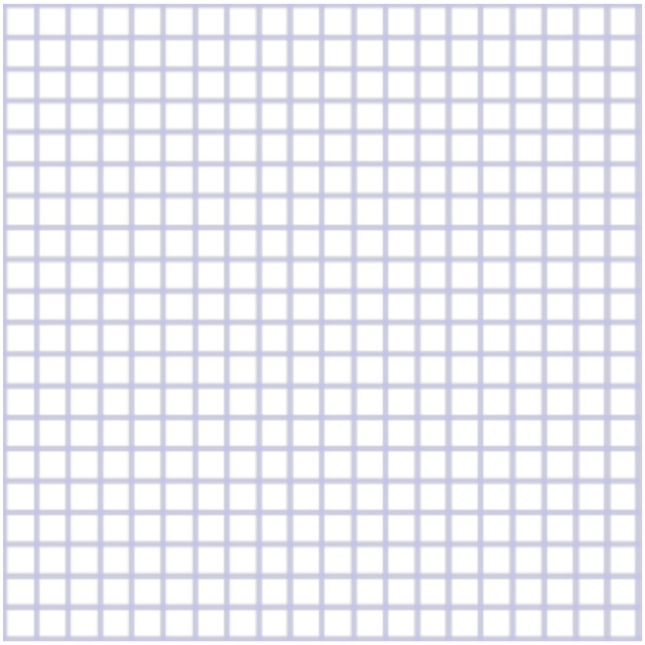
a. Write a system of inequalities to represent the dollars d she could earn for working h hours in a week.

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?

$10 \leq w \leq 30$

$e = 6.50 \cdot w + t$

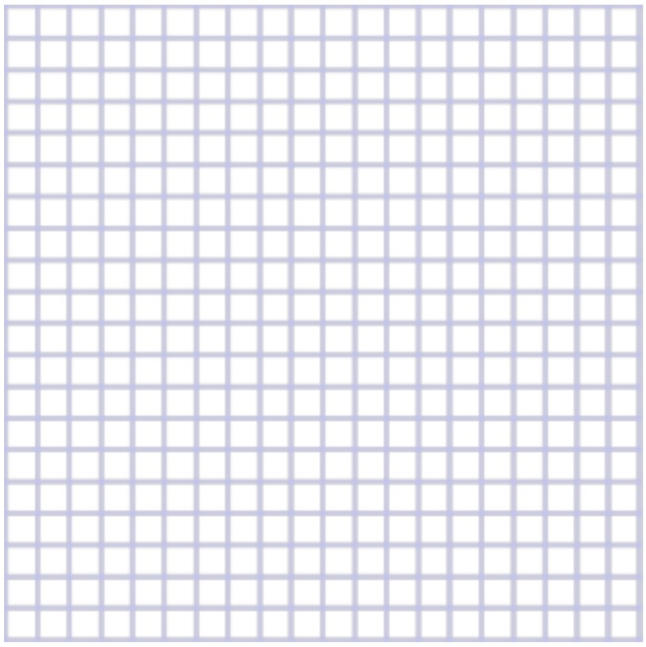


25. ICE RINKS Ice resurfacers are used for rinks of at least 1000 square feet and up to 17,000 square feet. The price ranges from as little as $10,000 to as much as $150,000.

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

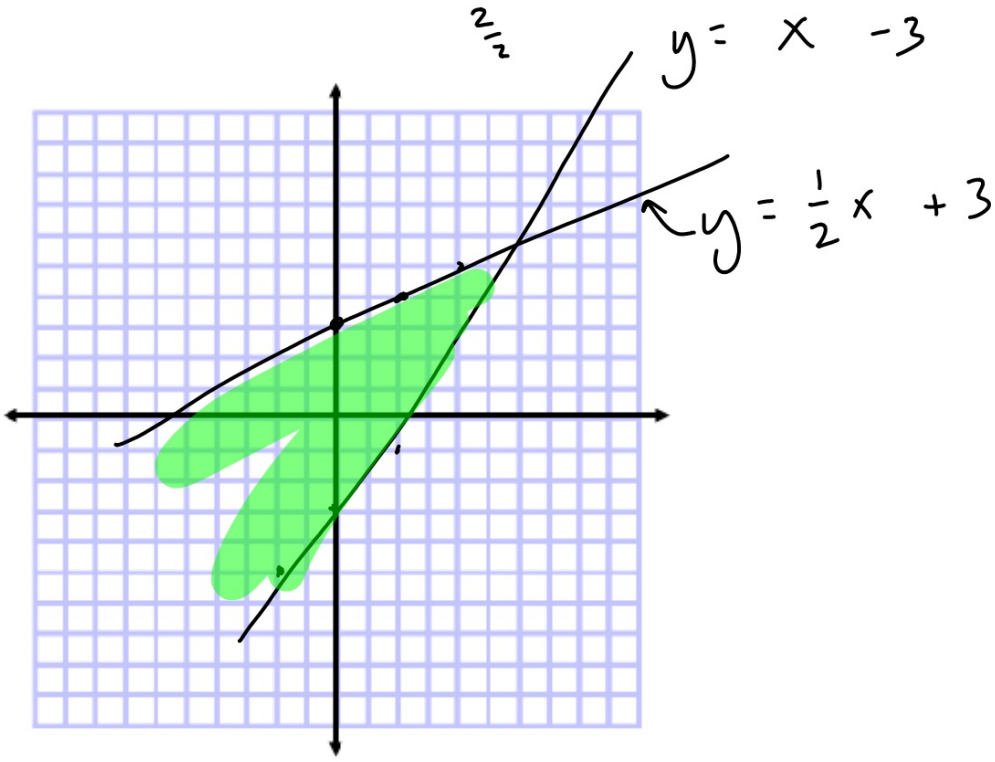
b. Name one possible solution.

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



$y \geq x - 3$

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



$y \leq x - 1$

$y \geq -\frac{1}{3}x + 6$