Algebra I
Lesson 7-5

- I can solve systems of inequalities by graphing.
- I can solve real-world problems involving systems of inequalities.

To solve a system of ___inequalities___, you need to find the ordered pairs that satisfy ___all___ the inequalities involved. One way to do this is to graph the inequalities on the ___same coordinate plane___. The solution set is represented by the ___intrsection___, or overlap, of the graphs.

Solve the system of inequalities by graphing.

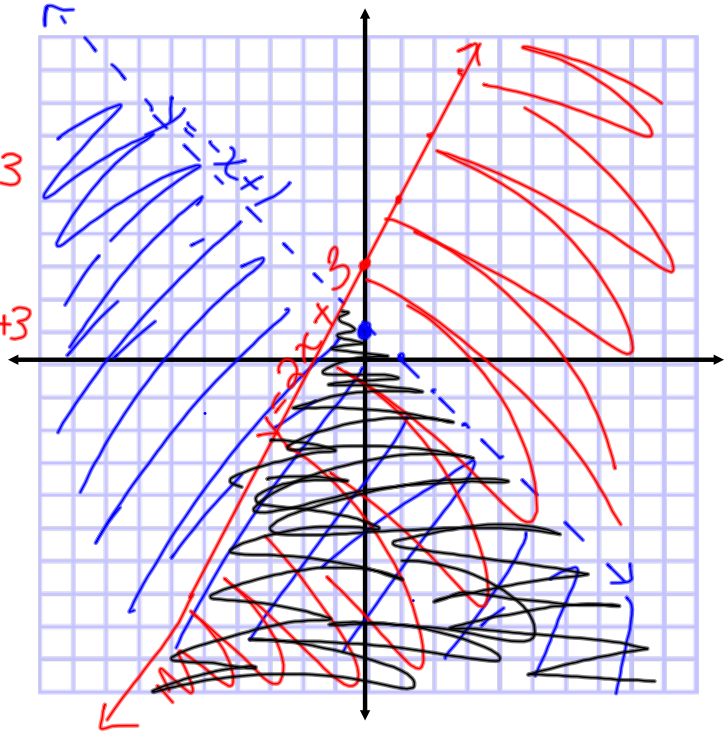
$$y < -x + 1$$
$$y \le 2x + 3$$

$y = -x + 1$
$m = -1$
$b = 1$

$0 < -0 + 1$
$0 < 1$
T

$y = 2x + 3$
$m = 2$
$b = 3$

$0 \le 2(0) + 3$
$0 \le 3$
T



Solve the system of inequalities by graphing.

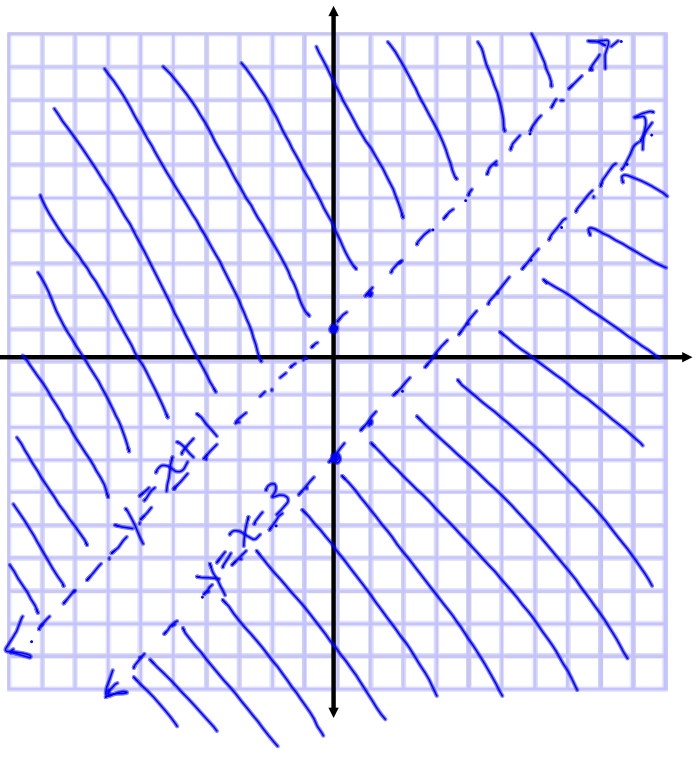
$$x - y < -1$$
$$x - y > 3$$

$x - y = -1$
$-x \quad -x$
$-1(-y) = (-x + -1)(-1)$
$y = x + 1$
$m = 1$
$b = 1$

$0 - 0 < -1$
$0 < -1$
F

$x - y = 3$
$-x \quad -x$
$-1(-y) = (-x + 3)(-1)$
$y = x - 3$
$m = 1$
$b = -3$

$0 - 0 > 3$
$0 > 3$
F



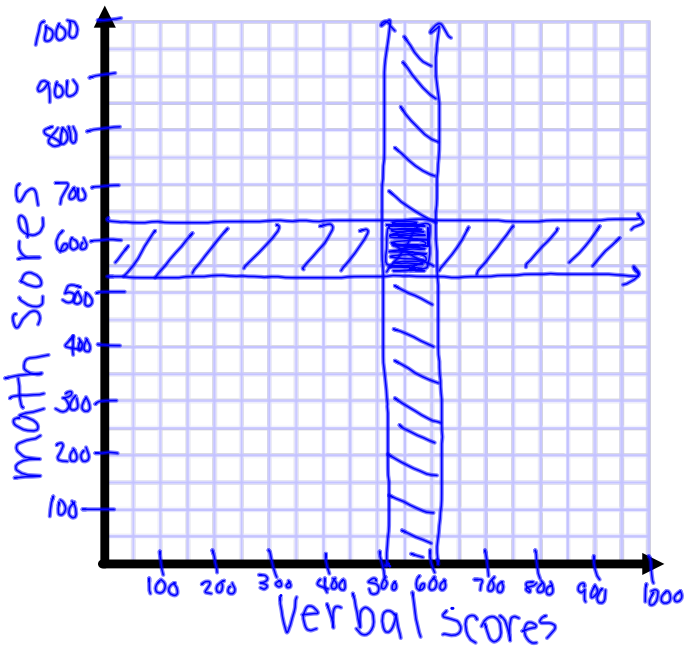
Assignment:

Worksheet 429

The middle 50% of first-year students attending Florida State University score between 520 and 620, inclusive, on the verbal portion of the SAT and between 530 and 630, inclusive, on the math portion. Graph the scores that a student would need to be in the middle 50% of FSU freshmen.

$520 \leq V \leq 620$

$530 \leq m \leq 630$



To ensure a growing season of sufficient length, Mr. Hobson has at most 16 days left to plant his corn and soybean crops. He can plant corn at a rate of 250 acres per day and soybeans at a rate of 200 acres per day. If he has at most 3500 acres available, how many acres of each type of crop can he plant.

C = # of days planting corn

S = # of days planting soybeans

$C + S \leq 16$

$250c + 200s \leq 3500$

$C + S = 16$

$-C \quad -C$

$S = -C + 16$

$m = -1$

$b = 16$

$0 + 0 \leq 16$

$0 \leq 16$

T

$250c + 200s = 3500$

$-250c \quad -250c$

$\frac{200s}{200} = \frac{-250c + 3500}{200}$

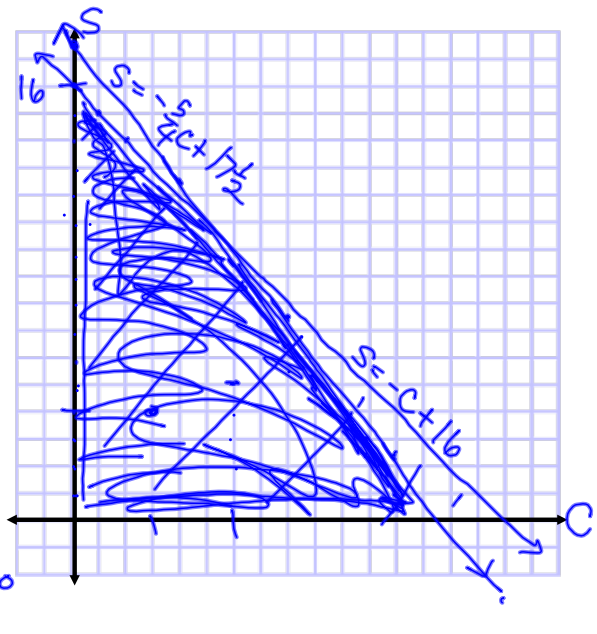
$S = -\frac{5}{4}c + 17\frac{1}{2}$

$m = -\frac{5}{4}$

$b = 17\frac{1}{2}$

$0 \leq 3500$

T



Assignment:

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