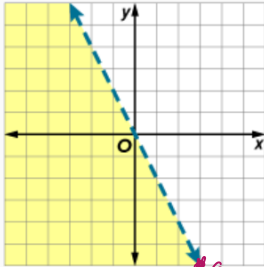


Warm Up:

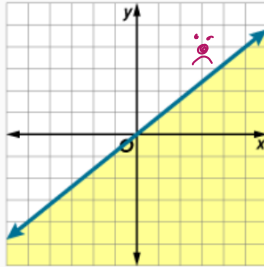
Is the ordered pair a solution of the inequality?

1. $(3, -6)$



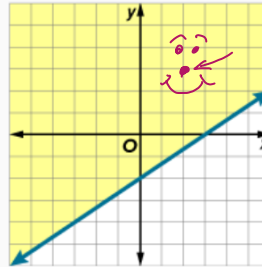
Nope!

2. $(3, 4)$



Nope!

3. $(2, 3)$



Yeppers!

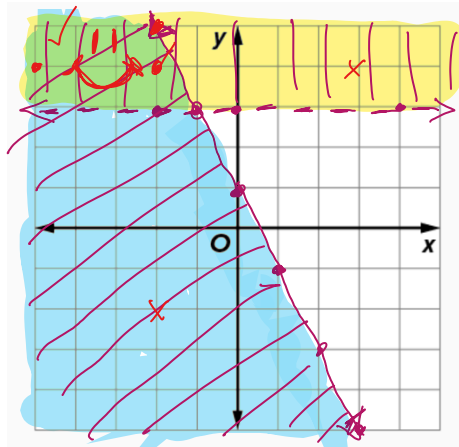
Speak Like A Mathematician:

system of inequalities: a set of two or more inequalities
with the same variables.

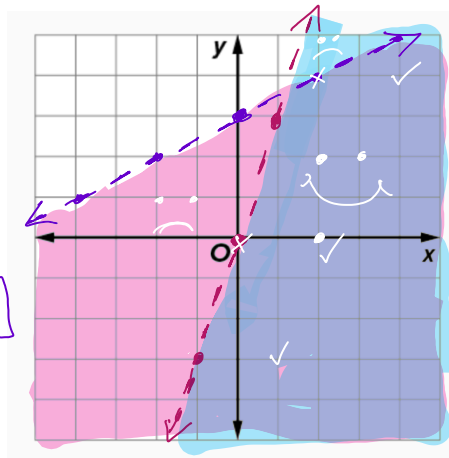
Example 1: Solving Systems on Inequalities by Graphing

Solve the system of inequalities by graphing.

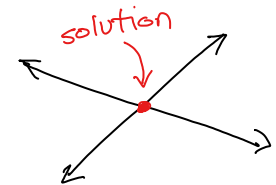
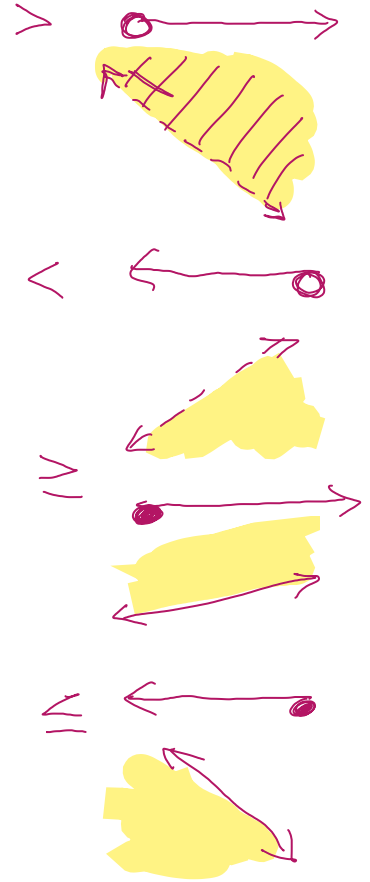
a) $y > 3$ dashed shade ↑
 $y \leq -2x + 1$ solid shade ↓
 $m = -2$ $b = (0, 1)$



b) $x - 2y > -6$
 $y < 3x + 0$
 $-2y > -x - 6$
 $\div -2$
 $y < \frac{1}{2}x + 3$
 dashed shade below



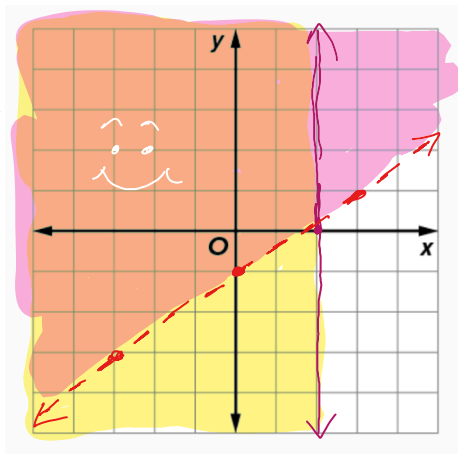
Graphing Linear Inequalities:



SC Algebra 1

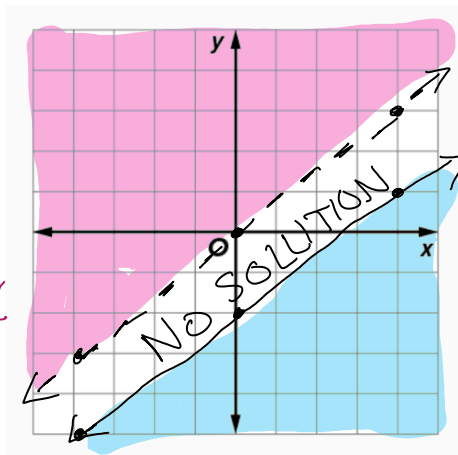
7.5 Systems of Inequalities

c) $x \leq 2$ (solid vertical line)
 $y > \frac{2}{3}x - 1$
 slope y-int



Example 2: Solving Systems on Inequalities by Graphing

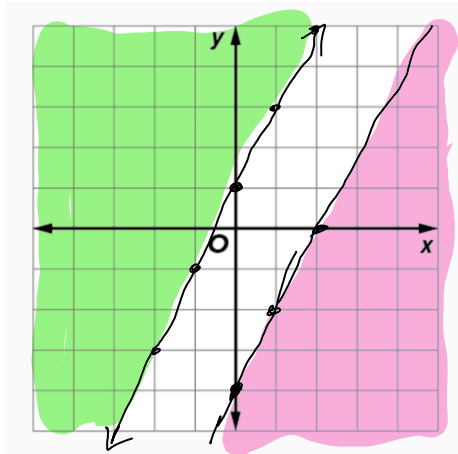
a) $-3x + 4y > 0$ (dashed)
 $3x - 4y \geq 8$ (solid)
 $-3x + 4y > 0$
 $+3x$
 $4y > 3x$
 $y > \frac{3}{4}x$
 $3x - 4y \geq 8$
 $-3x$
 $-4y \geq -3x + 8$
 -4
 $y \leq \frac{3}{4}x - 2$ (solid / below)



No Solution

b) $2x + 1 \leq y$
 $2x - y \geq 4$
 $-2x$
 $y \geq 2x + 1$

$-y \geq -2x + 4$
 -1
 $y \leq 2x - 4$



Example 3: Apply Systems of Inequalities

A family and consumer sciences class is making pillows and blankets to donate to a local shelter. The class has 40 yards of fabric to use. Pillows require 1.25 yards of fabric and take 1 hour to make. Blankets use 4 yards of fabric and take 2.5 hours to make. The class has 28 hours of class time left for the semester. Determine the number of pillows and blankets the class can make for the shelter. List three possible combinations.

A) Define the Variables and write a system of inequalities to represent the situation.

Let $p = \#$ of pillows $b = \#$ of blankets

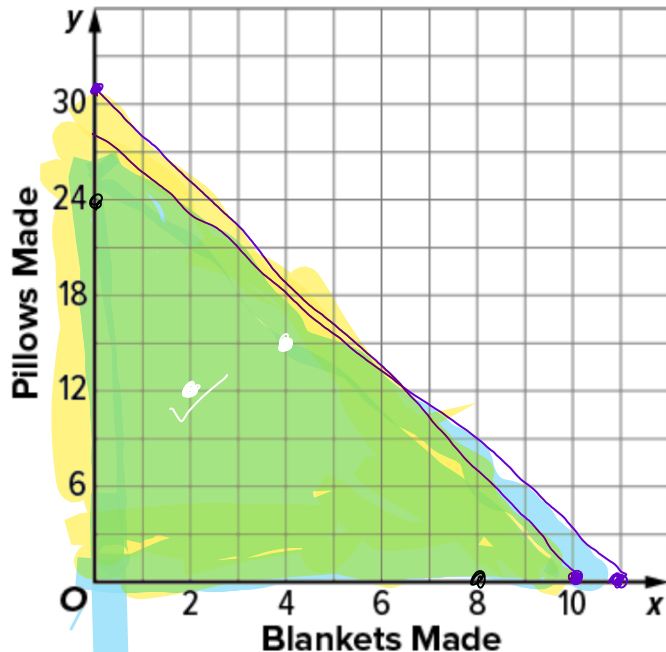
$$1.25p + 4b \leq 40$$

$$1p + 2.5b \leq 28$$

32 pillows or 10 blanket

Graph by intercepts

B) Graph the system.



C) Find a viable solution.