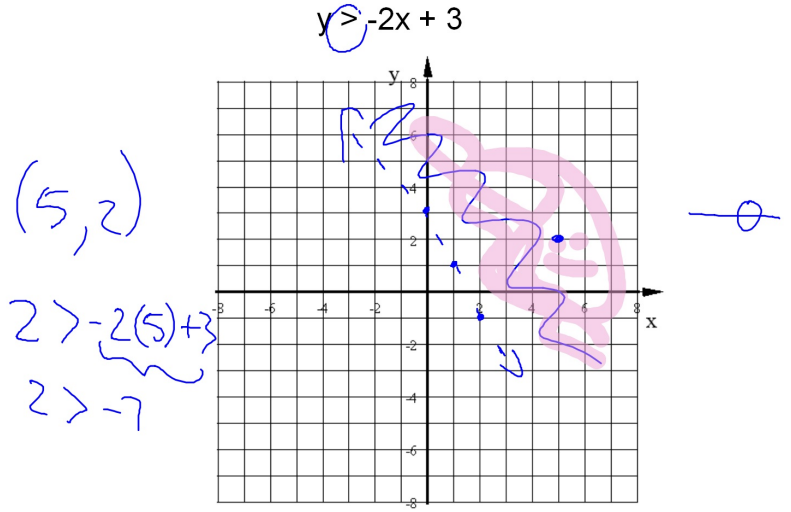
Get a sheet of graph paper and a ruler.

Graph each linear inequality.

$y > -2x + 3$ $\qquad$ $8x - 6y \leq 24$

$y > -2x + 3$



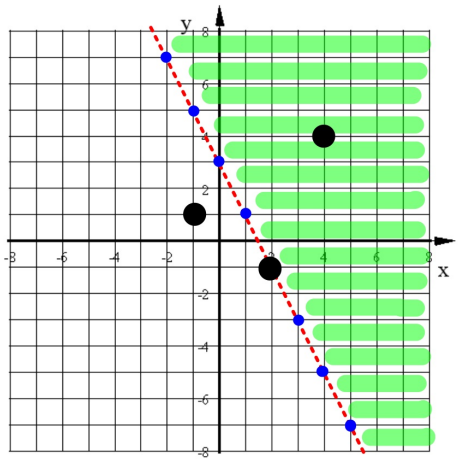
$y > -2x + 3$

Is each of the points below a solution to the inequality?

a) (4,4) Yes

b) (-1,1) NO

c) (2, -1) NO



In general what is the solution to this inequality?

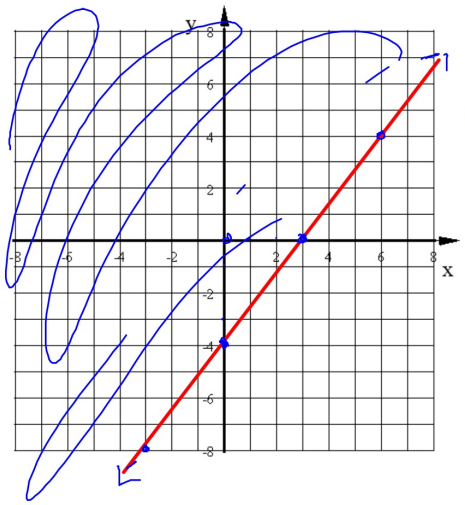
All points in the shaded region.

$8x - 6y \leq 24$

$-8x \quad -8x$

$\frac{-6y}{-6} \leq \frac{-8x + 24}{-6}$

$y \geq \frac{4}{3}x - 4$



$8x - 6y \leq 24$

x-int = 3

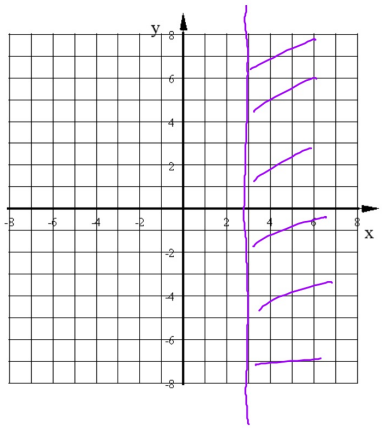
y-int = -4

(0,0)

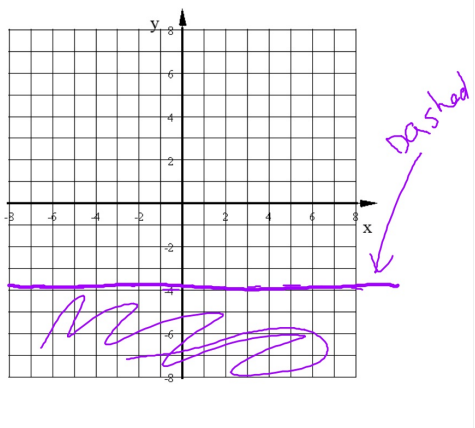
$0 \leq 24$

Graph each

$x \geq 3$



$y < -4$



Section 3-3: Systems of inequalities.

The solution to a linear inequality are all the points in the solution region (the shaded area).

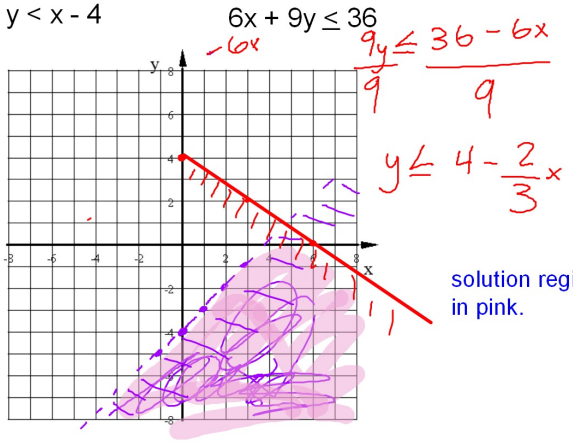
What is the solution to a system of inequalities?

The area that is shaded twice, once for each inequality.

Where the two shadings overlap!

Graph this system of inequalities. Shade the solution region with a colored pencil or highlighter.

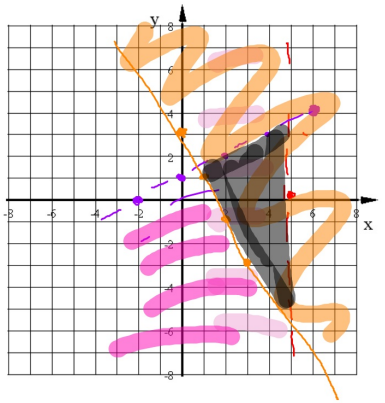
$y < x - 4$ $\quad 6x + 9y \leq 36$



solution region is shaded in pink.

Graph this system of inequalities. Shade the solution region with a colored pencil or highlighter.

$y < 0.5x + 1$ $\quad x < 5$ $\quad y \geq -2x + 3$



Solution region is shaded gray.

I'm going to the store to buy some CD's and some DVD's. DVD's cost $12 each and CD's cost $8 each.

I can spend no more than $48 at the store.

Define variables and write three inequalities to represent all the constraints in this situation.

Constraint: Any restriction or limit on a variable.

$8C+12D \leq 48$ $C \geq 0$ $D \geq 0$

Find at least 5 combinations of CD's and/or DVD's that meet all of these constraints.

every point in the solution region of the system of inequalities from above (seen on the next page) is a combination of CD's and DVD's that meet the constraints.

C = # CD's

D = # DVD's

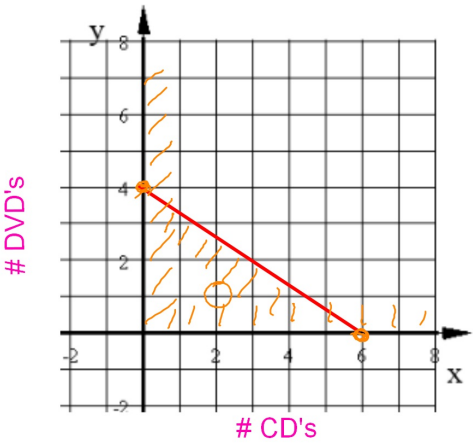
$C \geq 0$

$D \geq 0$

$8C + 12D \leq 48$

C-int = 6

D-int = 4



A farmer wants to plant some acres of soybeans and wheat this season.

- The farmer has up to 240 acres of land to use for these crops.
- The farmer has only enough seed for at most 180 acres of wheat.

Define variables and write four inequalities to model the constraints in this situation.

$S \geq 0$ $S+W \leq 240$

$W \geq 0$ $W \leq 180$