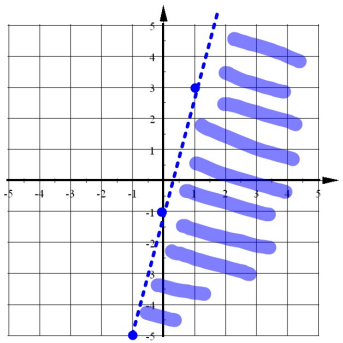
Is each point a solution to the following inequality?

$y < 4x - 1$

a. (1,5) NO

b. (4,-3) YES

c. (2,7) NO



Is each point a solution to this system of inequalities?

$y > 3x - 2$

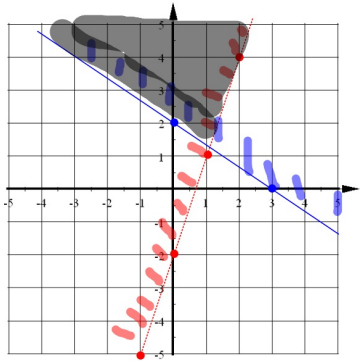
$6x + 9y \geq 18$

a. (2,4) NO

b. (1,1) NO

c. (-2,1) NO

d. (4,0) NO



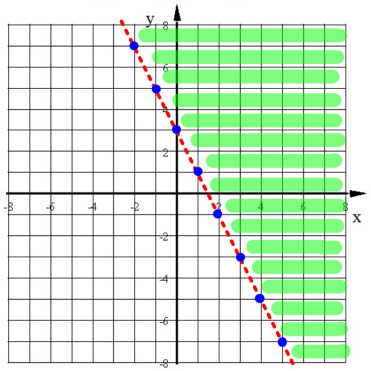
Is each of the points below a solution to the inequality?

$y > -2x + 3$

a) (5,4) Yes

b) (-6,-2) NO

c) (3, -3) NO



In general what is the solution to this inequality?

All the points in the region above the line.

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

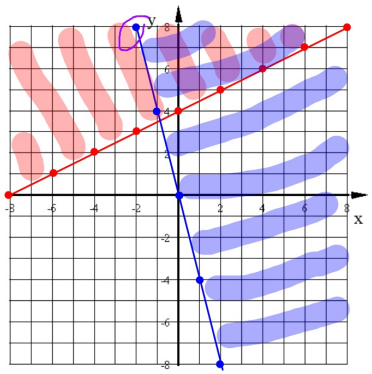
$y \leq 1/2x + 4$ $y \geq -4x$

(4, -3) NO

(-2,4) NO

(7,5) Yes

(4,7) Yes

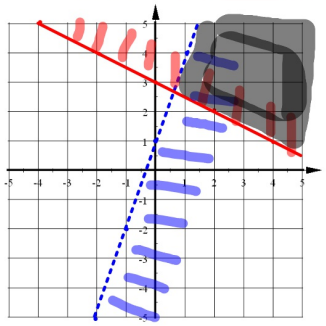


In general what is the solution to this system of inequalities?

All the points in the region where the two shadings overlap.

Solve this system of inequalities by graphing:

$y < 3x + 1$ $y \geq -0.5x + 3$



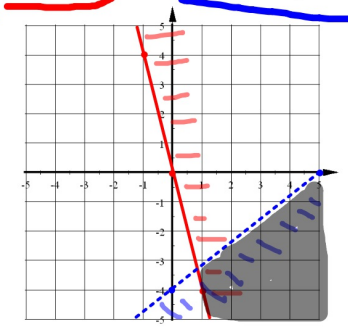
Solution to a system of Inequalities:

The region that is a solution to both inequalitites at the same time

The area that gets shaded twice, once for each inequality. I shaded it grey, a different color than the other two so that it would stand out as the solution region.

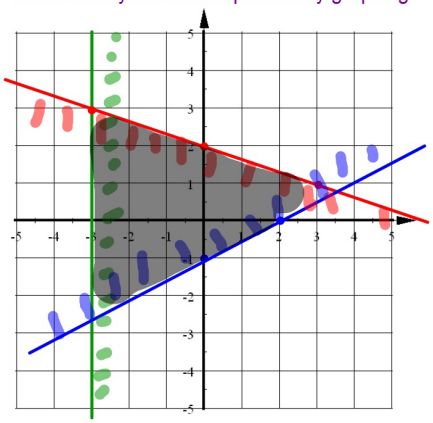
Solve this system of inequalities by graphing:

$y \geq -4x$ $8x - 10y > 40$



The solution region is the area below the blue line that is also above the red line. It is shaded grey to make it stand out as the solution region.

Solve this system of inequalities by graphing:



$$x \geq -3$$

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

$$3x - 6y \leq 6$$

The solution region is the triangular region bounded by all three graphs. It is where the shading overlaps for all three graphs.

Hwk #13

Pages 136-137

Problems 5-7, 11, 13, 30, 31, 43, 45

Use graph paper for 7, 11, 13, 43, 45

$y \geq 0$

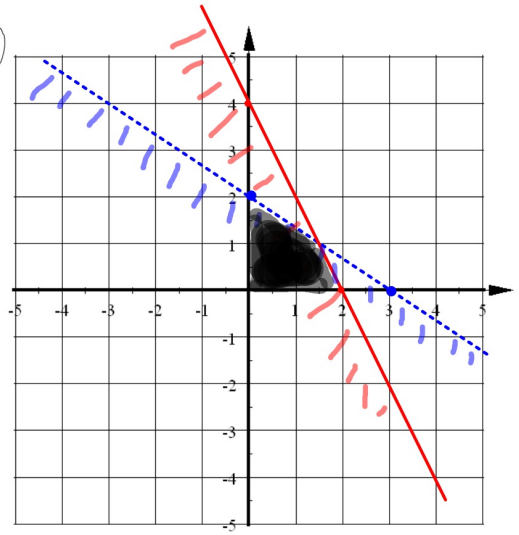
$x \geq 0$

These two inequalities represent the first quadrant.

$28x + 42y < 84$

$50x + 25y \leq 100$

The solution region is the quadrilateral bounded by the x-axis, y-axis, red line, and the blue line.



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.

1. $12D + 8C \leq 48$
2. $C \geq 0$
3. $D \geq 0$

→ the number of CD's and DVD's can't be negative.

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

Example answers are listed as ordered pairs (C,D)

(6,0) (3,0)

(5,0) (0,4)

(4,0)

C = # CD's

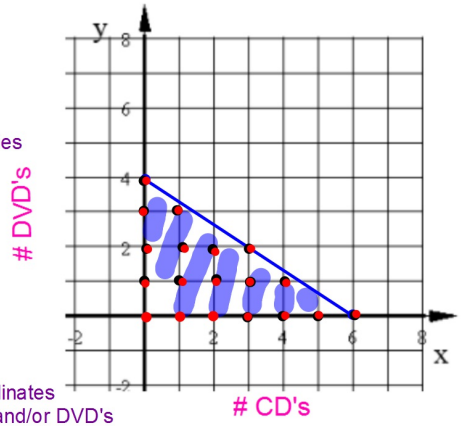
D = # DVD's

$C \geq 0$

$D \geq 0$

These two inequalities represent the first quadrant only.

$8C + 12D \leq 48$



Each point with integer value coordinates represents a combination of CD's and/or DVD's that make all three inequalities true.

There are 19 possible combinations of CD's and/or DVD's that spend no more than $48.

The three points on the line represent spending all $48 and the remaining points below the line represent spending less than $48.