5-Minute Check
solve using substitution:

1. $x + 2y = 6$
   $2x + 4y = 15$

Solve using elimination:

2. $2x + 5y = 9$
   $-2x + 8y = 4$

Solve the system:

3. $3x - 5y = 17$
   $4x + 5y = 46$

5-min check

5-Minute Check
solve using substitution:

1. $x + 2y = 6$ → $x = 6 - 2y$
   $2x + 4y = 15$
   $2(6-2y) + 4y = 15$ → $12 - 4y + 4y = 15$ → $12 = 15$ → $\emptyset$
   ($6 - 2y$)

Solve using elimination:

2. $2x + 5y = 9$ ← plug in $y = 1$ → $2x + 5 = 9$, $2x = 4$, $x = 2$ → $(2, 1)$
   $+ \; -2x + 8y = 4$
   $13y = 13$

Solve the system:

3. $3x - 5y = 17$ ← $3 \cdot 9 - 5y = 17$ → $27 - 5y = 17$ → $-5y = -10$ → $y = \frac{10}{5}$ → $(9, 2)$
   $+ \; 4x + 5y = 46$
   $7x = 63$ → $x = 9$

Answers: 1. no solution 2. (2,1) 3. (9, 2)

solutions

3-4 Graphing Systems of Inequalities

Objective:
Be able to Graph Systems of Inequalities

Remember that when you multiply or divide by a negative you flip the sign!

Get them in y = mx + b form to graph

m= slope = rise/run, b= y-intercept

Look at where their shading overlaps! This is your solution.

Example 1:

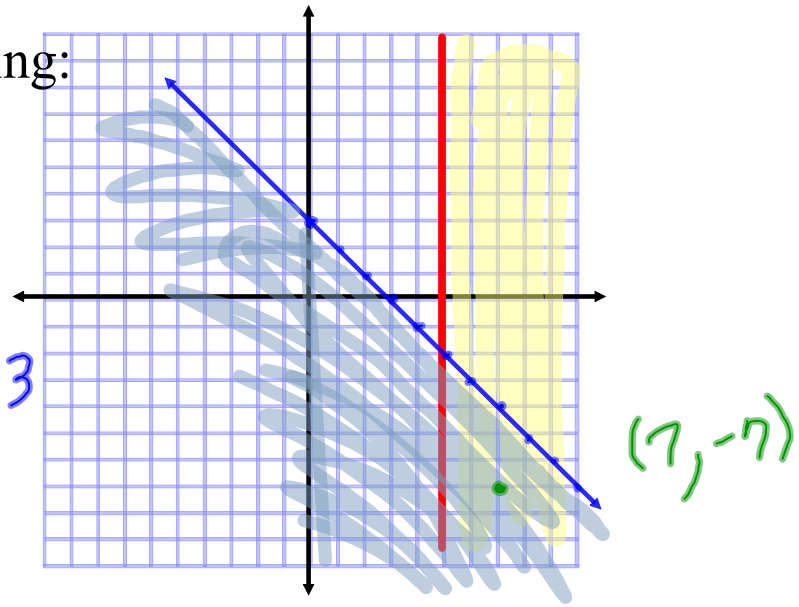
Solve by graphing:

$x \geq 5$

$x + y \leq 3$

$y \leq -x + 3$

$m = -1$ $b = 3$



ex 1

Example 2:

$-3 \leq y \leq 3$ ← horiz

$0 \leq x < 5$ ← vert

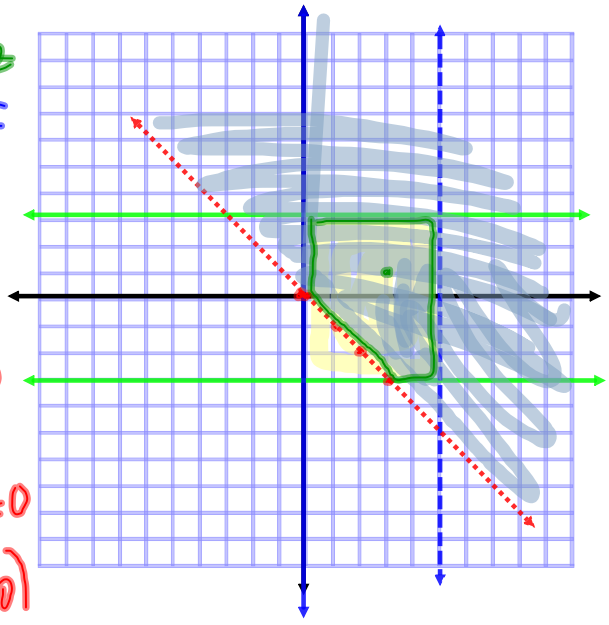
$x > -y$

$\frac{-y}{-1} \leq \frac{x}{-1}$

$y > -x + 0$

$m = \frac{-1}{1}$ $b = 0$

$(0, 0)$



ex 2

Example 3:
Find the endpoints of the triangle formed by:

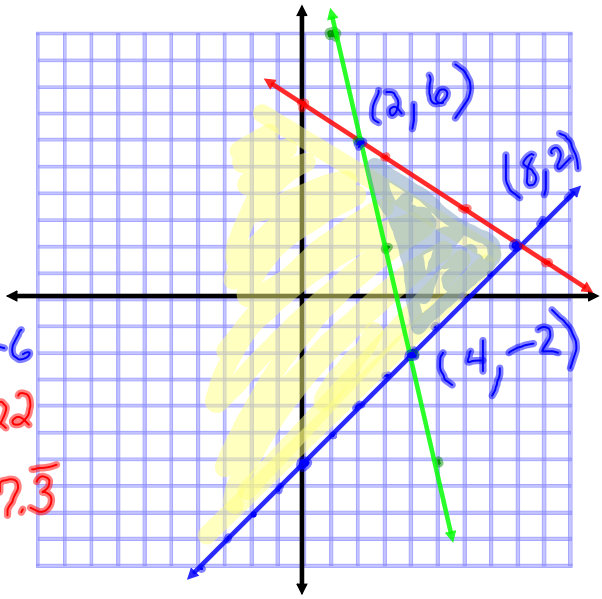
$x-y \leq 6$ → $-y \leq -x+6$, $y \geq x-6$, $m=1$ $b=-6$

$-2x-3y \geq -22$ → $-3y \geq 2x-22$, $y \leq -\frac{2}{3}x+7.3$

$-4x-y \leq -14$

$-y \leq 4x-14$

$y \geq -4x+14$



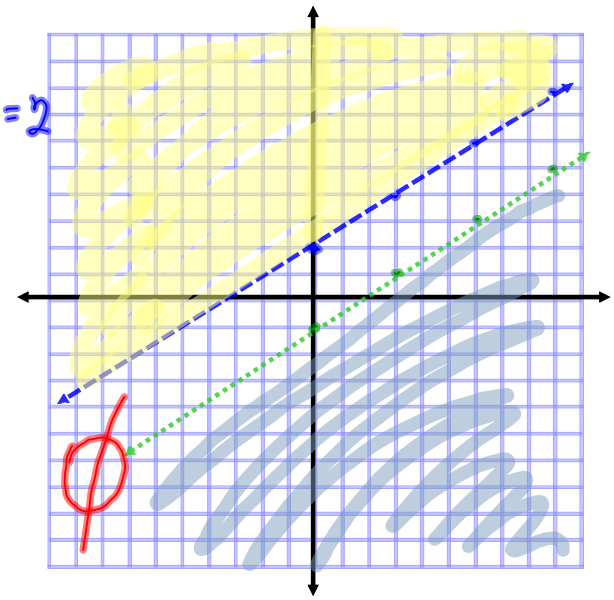
ex 3

Example 4:
Solve by graphing:

$y > 2/3\ x + 2$ ← $m=\frac{2}{3}$ $b=2$

$y < 2/3\ x - 1$

↑ $m=\frac{2}{3}$ $b=-1$

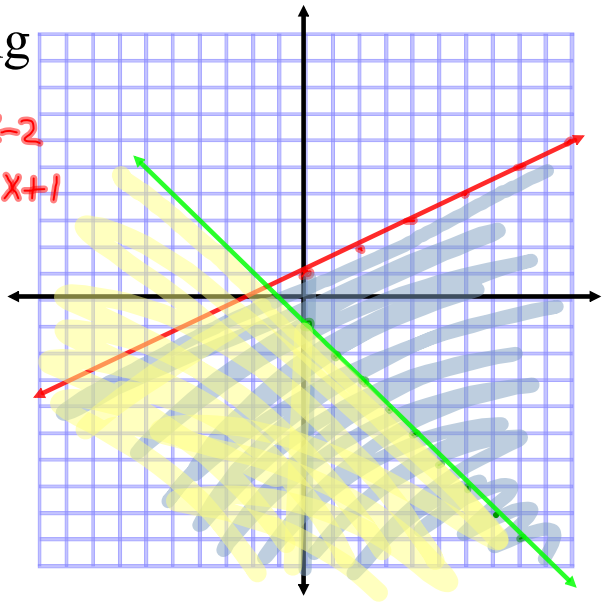


ex 4

Example 5:
Solve by graphing

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

$x+y \leq -1$ → $y \leq -x-1$



ex 5

Assignment:
p.150-151
#8-11, 16-19
Bonus: #28

Assignment