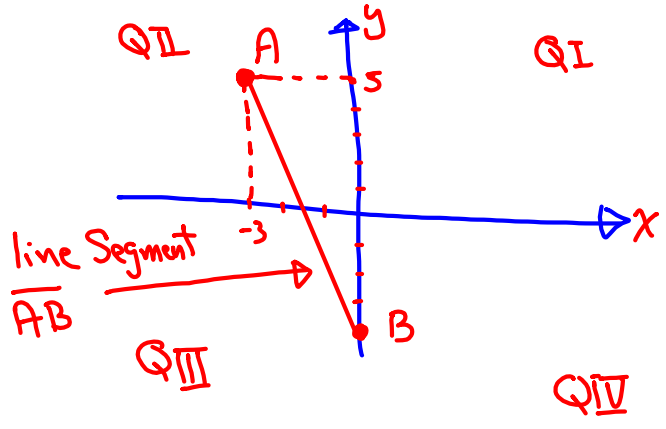
Math 115

Spring 2017

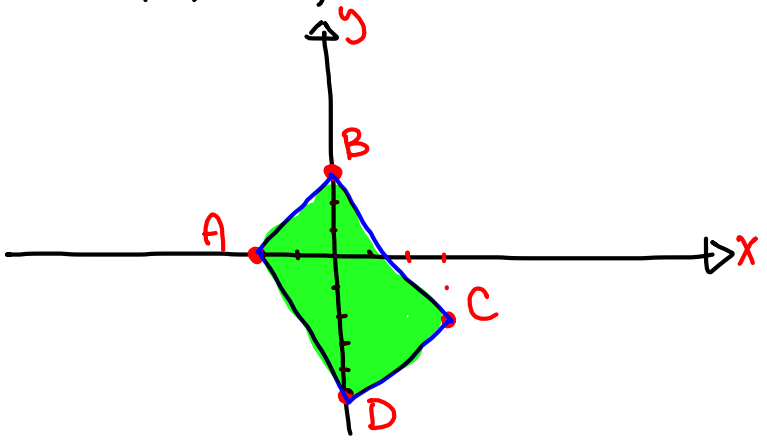
Lecture 9

Plot A(-3,5) & B(0,-4)



Plot $A(-2,0)$, $B(0,3)$, $C(3,-2)$, $D(0,-5)$

then Draw $\overline{AB}$, $\overline{BC}$, $\overline{CD}$, $\overline{AD}$.



Graphing lines:

① $x=a$ Vertical line $x=2$, $x=-4$, $x-4=0$, $x+3=0$

② $y=b$ Horizontal line $y=5$, $y=-3$, $y+1=0$, $y-6=0$

③ $Ax+By=C$ $x-2y=4$, $3x+4y=-12$

$y=mx+b$ Slant lines $y=3x-1$, $y=\frac{-2}{3}x+4$

$y-y_1=m(x-x_1)$ $y-1=3(x+2)$,

$y+5=-2(x-1)$

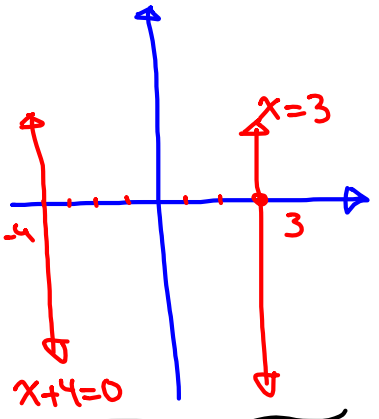
$y-3=\frac{3}{4}(x+8)$

Graph $x = 3$

x-only $\Rightarrow$ Vertical line

Graph $x + 4 = 0 \Rightarrow x = -4$

x-only $\Rightarrow$ Vertical line

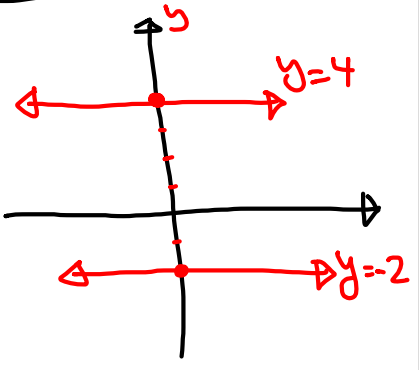


Graph $y = 4$

y-only $\Rightarrow$ Horizontal line

Graph $y + 2 = 0$

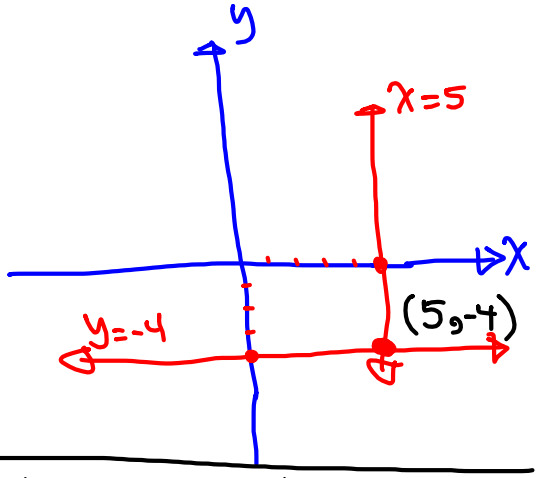
$y = -2$



Graph $x = 5$ & $y = -4$ in the same rectangular coordinate system. Clearly label their intersection pt.

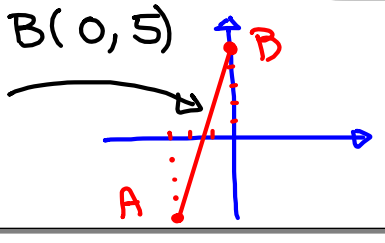
$x = 5$ — x-only — Vertical line

$y = -4$ — y-only — Horizontal line



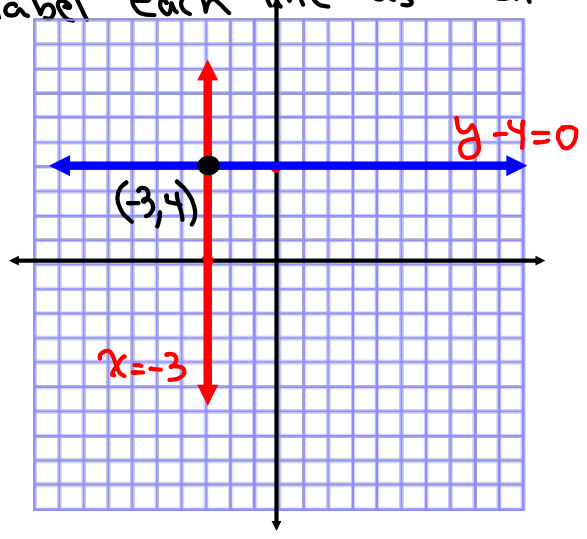
Draw $\overline{AB}$ with $A(-3,-4)$ & $B(0,5)$

$\overline{AB}$



Draw $x=-3$ & $y-4=0$ ($y=4$) in the same coordinate system. label each line as well as their intersection pt.

$x=-3$ V.L. & $y-4=0$ $y=4$ H.L.

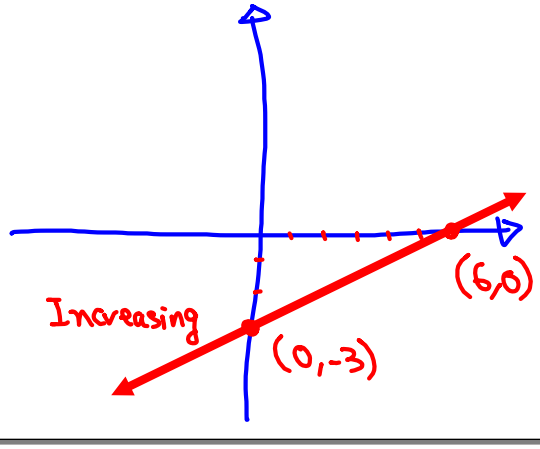


$Ax + By = C$ Slant line in Standard form when C is divisible by both A and B, we use the intercept Method

$x - 2y = 6$

x	y
0	-3
-6	0

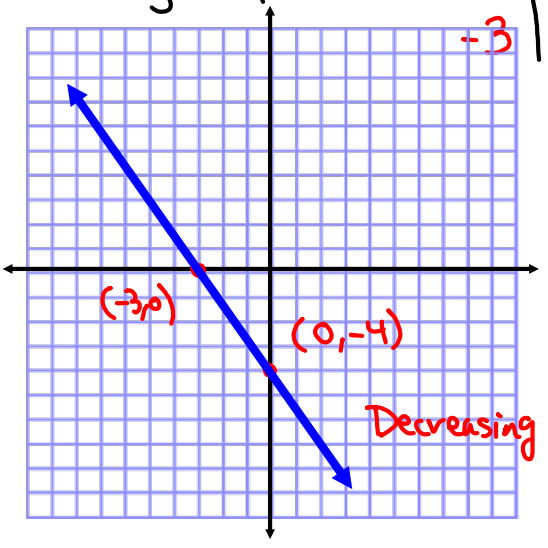
x	y
0	
	0



Graph $4x + 3y = -12$

12 is divisible by 4 & 3 $\Rightarrow$

x	y
0	-4
-3	0

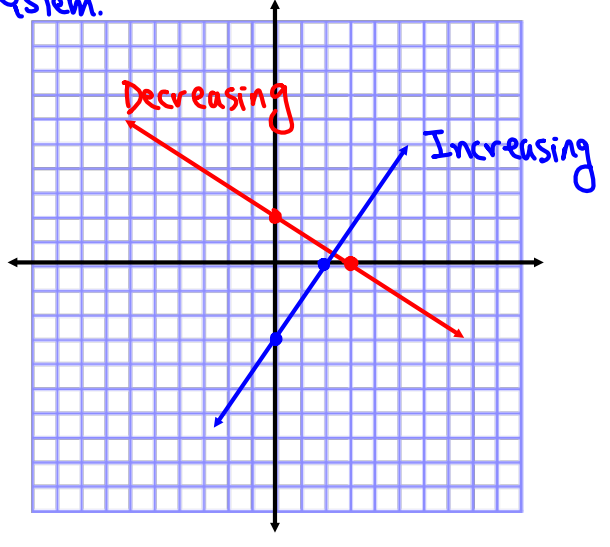


Graph $2x + 3y = 6$ & $3x - 2y = 6$

in the same coordinate system.

x	y
0	2
3	0

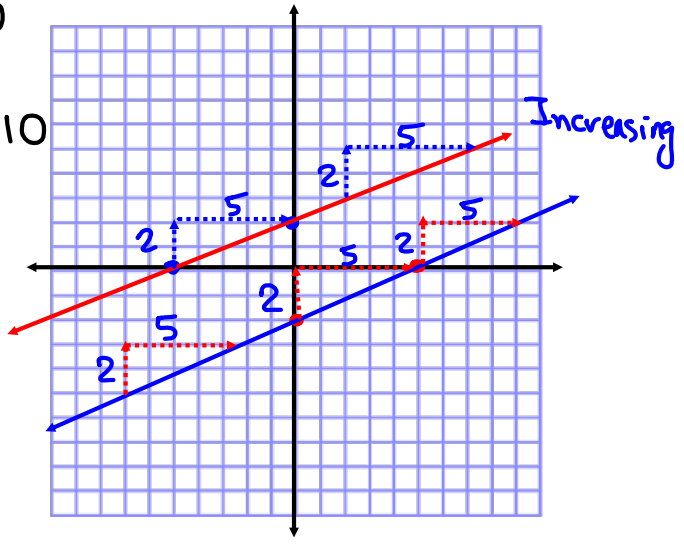
x	y
0	-3
2	0



$$\begin{cases} 2x - 5y = 10 \\ 2x - 5y = -10 \end{cases}$$

x	y
0	-2
5	0

x	y
0	2
-5	0



Slope of line

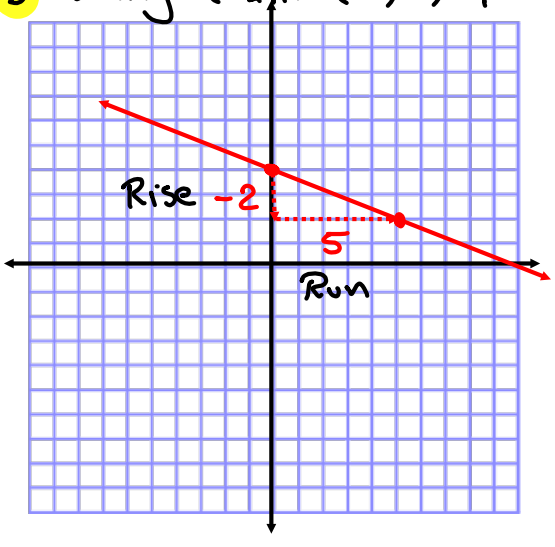
$$m = \frac{\text{Rise}}{\text{Run}}$$

Graph $y = mx + b$ using Y-Int $(0, b)$ & Slope m.

$$y = \frac{-2}{5}x + 4$$

Y-Int $(0, 4)$

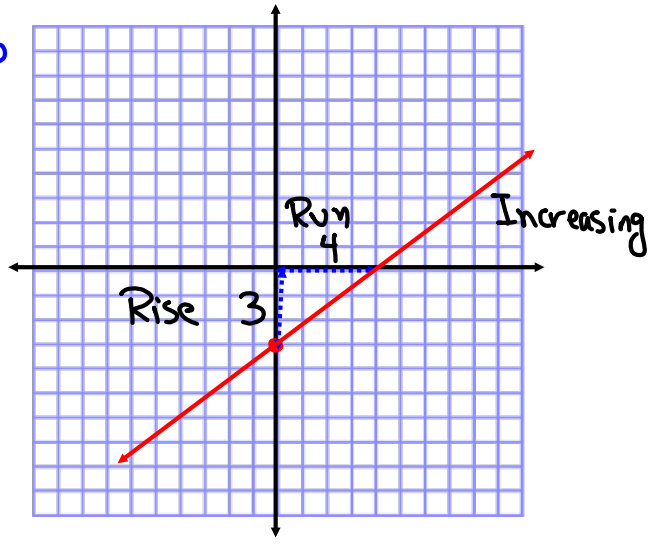
$$m = \frac{-2}{5} = \frac{\text{Rise}}{\text{Run}}$$



Graph $y = \frac{3}{4}x - 3$

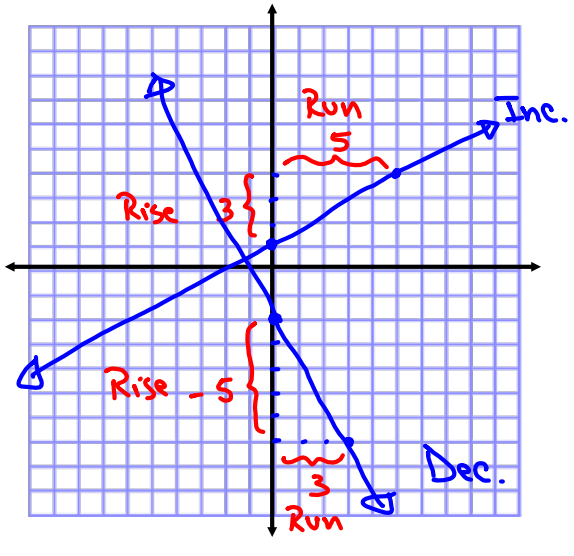
Y-Int $(0, -3)$

$m = \frac{3}{4} = \frac{\text{Rise}}{\text{Run}}$



Graph

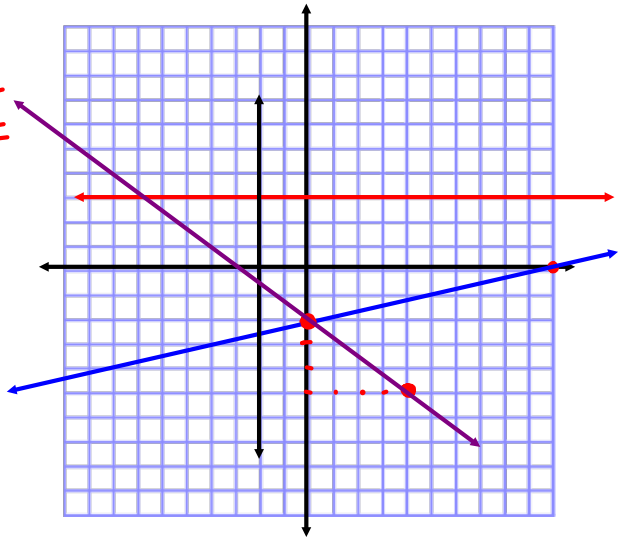
$$\begin{cases} y = \frac{3}{5}x + 1 \\ y = \frac{-5}{3}x - 2 \end{cases}$$



Graph

$$\begin{cases} x - 5y = 10 \\ y = 3 \\ x = -2 \\ y = \frac{-3}{4}x - 2 \end{cases}$$

x	y
0	-2
10	0



$$\begin{cases} y = 4 \\ x = -3 \\ y = \frac{3}{5}x - 1 \\ 2x + 3y = 6 \end{cases}$$

Shade the region that is bounded by all 4 lines.