

## 9/13 - 3.4 and 3.5 Homework Assignments

S 3.4 I #s 2, 10, 11, 12, 26, 30, 32

S 3.4 II #s 60, 62, 90, 92, 94

S 3.5 I #s 2, 6, 7, 12, 18, 21, 24, 34

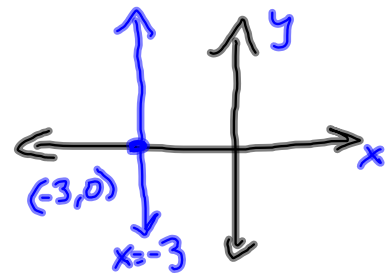
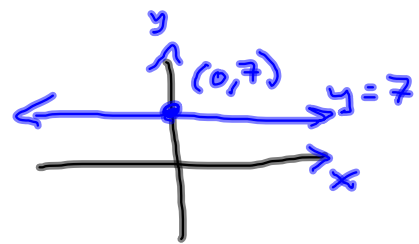
S 3.5 II #s 35, 39, 40, 42, 44, 48, 50, 54

15-pt quiz on  
page 2 & 4 of  
last test.  
Friday

Degenerate Lines

$y = 7$  horizontal  $m = 0$

$x = -3$  vertical  $m \nexists$

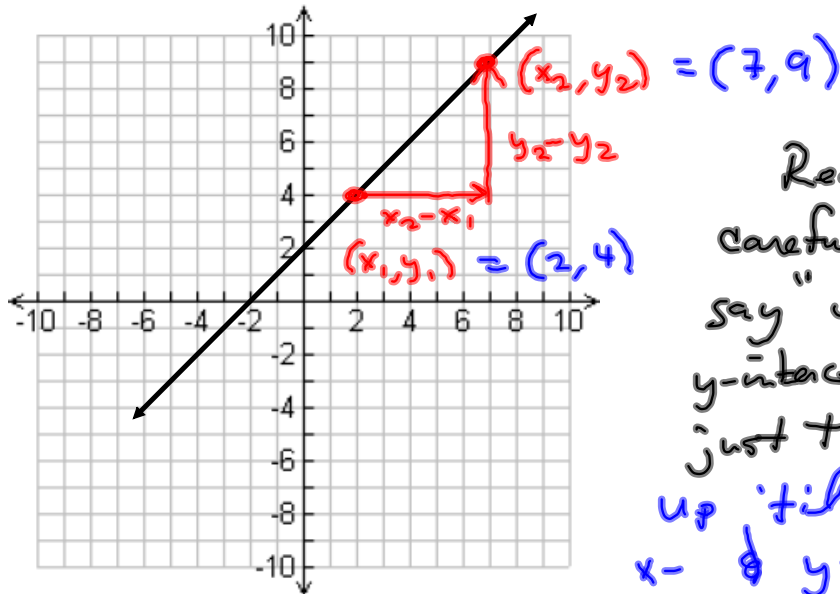


§ 3.2 I Due Tuesday

§ 3.2 II Due Tuesday @ end  
of class

§ 3.3 Due Wednesday @ start.

$$\begin{aligned} \text{Slope} &= \frac{\text{RISE}}{\text{RUN}} = \frac{y_2 - y_1}{x_2 - x_1} = \frac{9 - 4}{7 - 2} = \frac{5}{5} = 1 \\ &= \frac{1}{1} = \frac{\text{up } 1}{\text{right } 1} \end{aligned}$$



Read 3.4 instructions carefully. When they say "use slope & y-intercept to graph," do just that.

Up 'til now, I wanted x- & y-intercepts.

I usually do. But pay attention to instructions.

Test 1 #6,  $x = 5 \text{ hr}$

Let  $x =$  the # of hours it takes the two of them to finish working together.

Let  $x =$  the time it takes them, working together (in hours)

$$\frac{1}{2}x + \frac{1}{3}x = 1$$

Jobs = Jobs

In one hour:

$$\frac{1}{2} + \frac{1}{3} = \frac{1}{x}$$

$\frac{1}{2}$  job done in 1 hr  
 $\frac{1}{3}$  job done in 1 hr  
 $\frac{1}{x}$  job done in 1 hr

Let  $x =$  price of a book after tax <sup>(in \$)</sup> if  
 it costs \$123<sup>00</sup> before tax  
 What's the price after tax?

$$x = \text{price} + \text{tax} \quad \begin{array}{l} 6\% \text{ sales} \\ \text{tax} \end{array}$$

$$= 123 + (.06)(123)$$

On the test, we're given price after  
 tax & asked to find the price before tax =  $x$   
 (in \$)

$$130.38 = x + .06x = 1x + .06x = (1+.06)x$$

$$= 1.06x$$

$$130.38 = 1.06x$$

$$\frac{130.38}{1.06} = x = \$123<sup>00</sup>$$

$$|3x-2|=7$$

$$3x-2=7 \quad \text{OR} \quad 3x-2=-7$$

$$|3x-2| < 7$$

$$3x-2 < 7 \quad \text{AND} \quad 3x-2 > -7$$

$$|3x-2| > 7$$

$$3x-2 > 7 \quad \text{OR} \quad 3x-2 < -7$$

$$|3x-2| > -7 \quad \text{Always} \quad (-\infty, \infty)$$

$$|3x-2| < -7 \quad \text{Never} \quad \emptyset$$

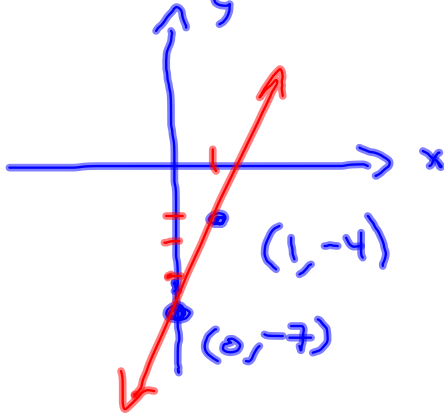
$$|3x+2| = |4x-7|$$

$$3x+2 = 4x-7 \quad \text{OR} \quad 3x+2 = -(4x-7)$$

Graph using the slope & y-intercept.

$$y = 3x - 7$$

$$m = 3, \text{ y-int} = (0, -7)$$



$$m = 3 = \frac{3}{1} \quad \begin{array}{l} \text{Right} \\ \downarrow \\ \text{UP } 3 \end{array}$$

$$(0, -7) \rightarrow (0+1, -7+3)$$

This is the one time  
I don't care about x-intercept.

$y = mx + b$  in function notation

$f(x) = mx + b$

$y = f(x)$

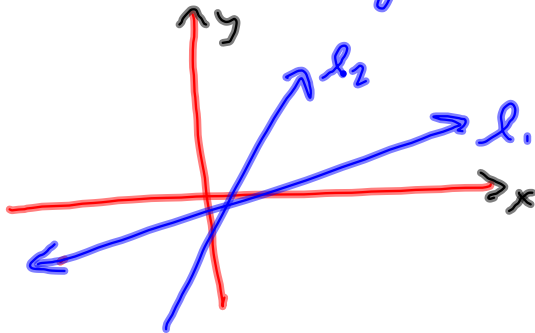
Output

$y$  is dependent variable

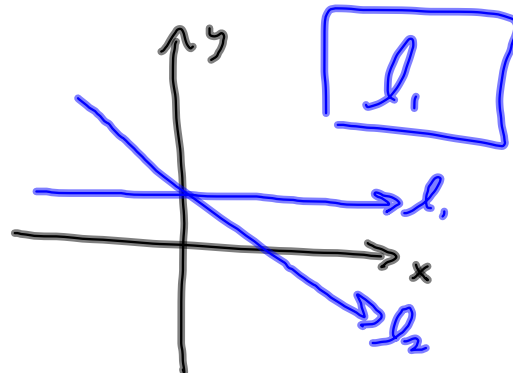
Input

$x$  is independent ..

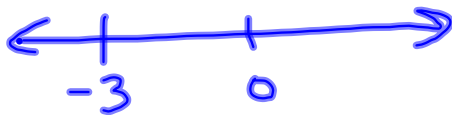
Which has greater slope?



$l_2$

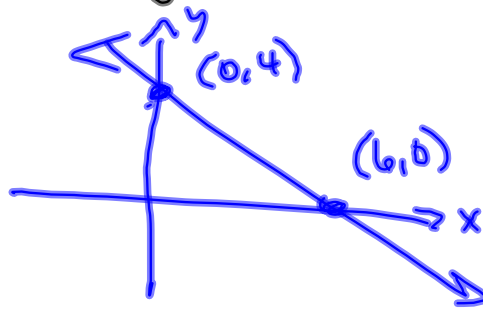


$l_1$



Graph  $2x + 3y = 12$ 

x	y
0	4
6	0

Graph  $2x + 3y = 12$  using slope & y-intercept.

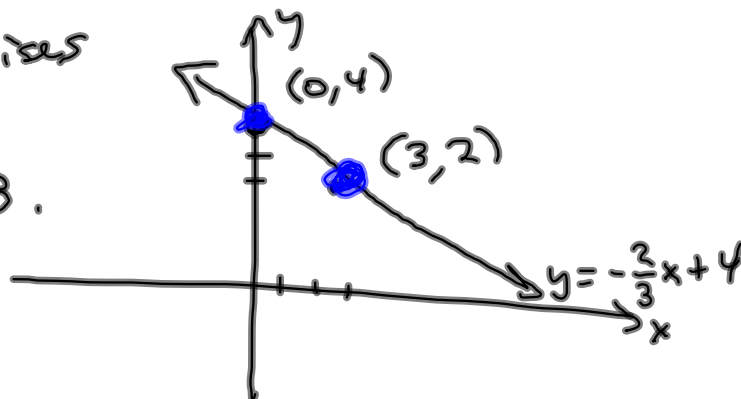
$$3y = -2x + 12$$

$$y = \frac{-2x + 12}{3}$$

$$y = -\frac{2x}{3} + \frac{12}{3}$$

$$y = -\frac{2}{3}x + 4$$

Answers to  
graphing exercises  
for §3.5 are  
on page GB.





## Parallel & Perpendicular Lines.

$$m_2 = m_1$$

$$m_2 = -\frac{1}{m_1}$$

Find slope of the line...

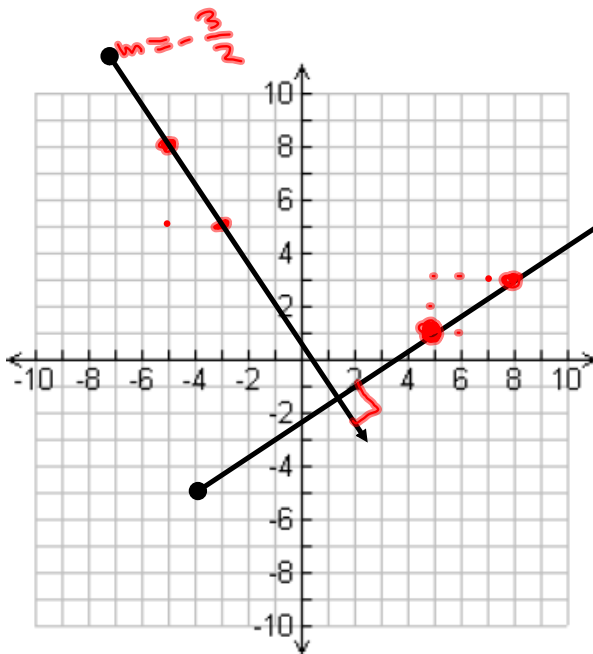
... parallel to  $3x + 2y = 12 \Rightarrow y = -\frac{3}{2}x + 6$   
 $m = -\frac{3}{2}$

... perpendicular to  $3x + 2y = 12$

$$m_{\perp} = +\frac{2}{3}$$

3.4 Tomorrow

3.5 Ask



$$m_{\perp} = +\frac{2}{3}$$

$$m = 3$$

$$m_{\perp} = -\frac{1}{3}$$