

Homework - Start changin' after  
Q1.

Sl.4 Find an eq'n of the line  
thru the 2 points  $(3, -5)$ ,  $(-2, -2)$   
 $(x_1, y_1)$ ,  $(x_2, y_2)$

$$m = \frac{y_2 - y_1}{x_2 - x_1} = \frac{-2 - (-5)}{-2 - 3} = \frac{-2 + 5}{-5} = \frac{3}{-5}$$

$$y = m(x - x_1) + y_1$$

$$y = -\frac{3}{5}(x - 3) + (-5)$$

STOP RIGHT THERE. ONTEST

If I asked for slope-intercept

$$\dots = -\frac{3}{5}x + \frac{9}{5} - \frac{5}{1} \cdot \frac{5}{5}$$

$$y = -\frac{3}{5}x - \frac{16}{5}$$

$\frac{9-25}{5}$

Line perpendicular to  $y = \frac{2}{3}x - 5$   
passing thru  $(2, 2)$

$$m = \frac{2}{3} \Rightarrow m_{\perp} = -\frac{3}{2}$$

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

$$y = m(x - x_1) + y_1$$

CURVE	SCORE
100	100
90	90
85	80
76	70
64	60
55	

$$(100, 100) = (x_1, y_1)$$

$$(85, 90) = (x_2, y_2)$$

$$(76, 80)$$

$$(64, 70)$$

$$(55, 60)$$

A's:

$$m = \frac{90 - 100}{85 - 100} = \frac{-10}{-15} = +\frac{2}{3}$$

$$y = +\frac{2}{3}(x - 85) + 90$$

$$+ \frac{2}{3}(x - 100) + 100$$

Graphing:

$$y = 3x - 7$$

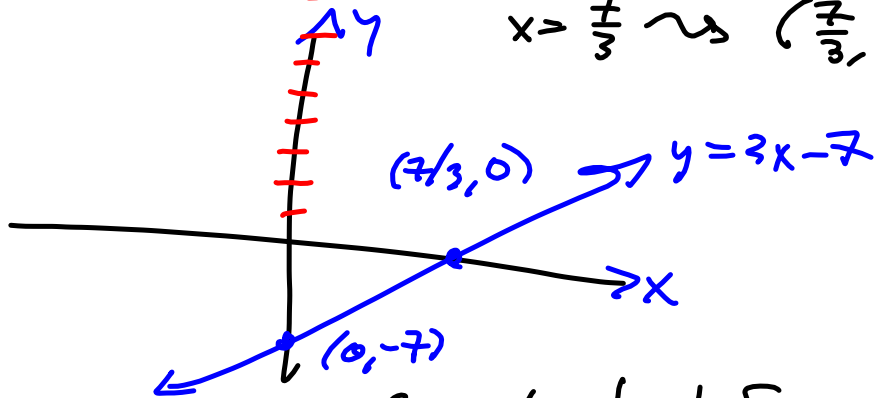
wants Intercepts!

$$(0, -7)$$

$$y = 3x - 7 = 0$$

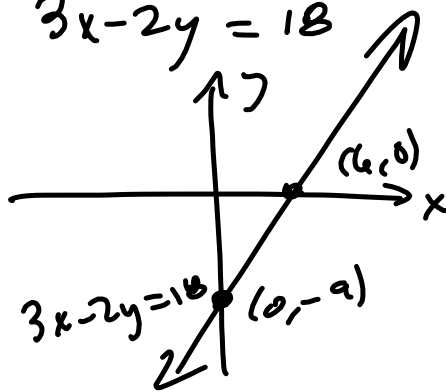
$$3x = 7$$

$$x = \frac{7}{3} \rightsquigarrow \left(\frac{7}{3}, 0\right)$$



General or Standard Form

$$3x - 2y = 18$$



x	y
0	-9
6	0

$$-2y = 18$$

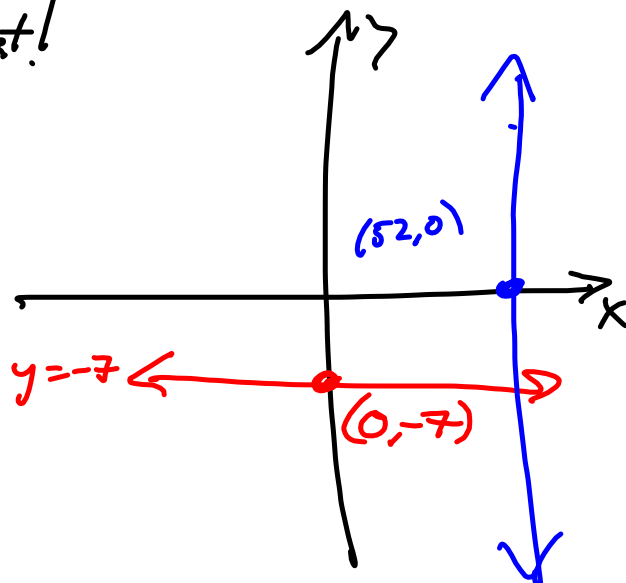
$$3x = 18$$

## Verticals &amp; Horizontals

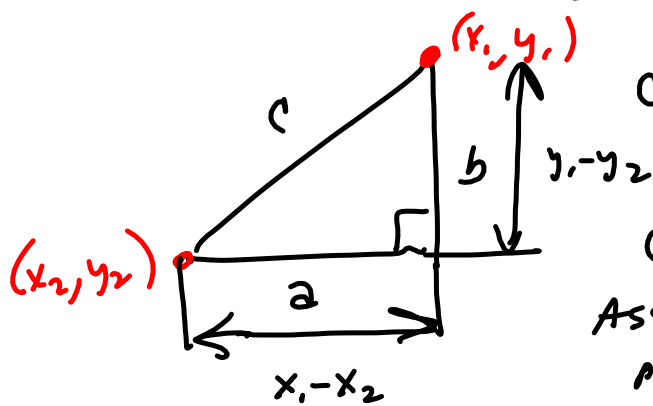
Pay attention to wording  
on the test!

$$(a) y = -77$$

$$(b) x = 52$$



Distance between  $(x_1, y_1)$  &  $(x_2, y_2)$  is



$$c^2 = b^2 + a^2$$

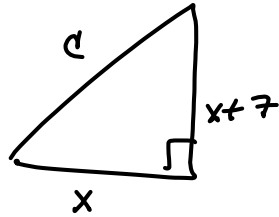
$$c = \pm \sqrt{b^2 + a^2}$$

Assume  $c$  is a positive distance

$$c = \sqrt{a^2 + b^2}$$

$$= \sqrt{(x_1 - x_2)^2 + (y_1 - y_2)^2}$$

§ 1.6 #91



$$P = x + x + 7 + c = 30$$

$$= x + x + 7 + \sqrt{x^2 + (x+7)^2} = 30$$

$$= 2x + 7 + \sqrt{x^2 + (x+7)^2} = 30$$

$$\frac{-2x - 7}{\quad\quad\quad} = \frac{-7 - 2x}{\quad\quad\quad}$$

$$\sqrt{x^2 + (x+7)^2} = 23 - 2x$$

Square both sides

$$x^2 + x^2 + 14x + 49 = (23 - 2x)^2$$

$$(23 - 2x)^2 = (2x - 23)^2$$

$$= (2x)^2 - 2(2x)(23) + 23^2$$

$$2x^2 + 14x + 49 = 4x^2 - 92x + 529$$

$$\underline{-2x^2 - 14x - 49 = -2x^2 - 14x - 49}$$

$$2x^2 - 106x + 480 = 0 \rightarrow$$

$$2(x^2 - 53x + 240) = 0$$

$$x^2 - 53x + 240 = 0$$

$$x^2 - 5x - 48x + 240 = 0$$

$$x(x-5) - 48(x-10)$$

$$= x(x-5) - 48(x-5)$$

$$= (x-5)(x-48)$$

$$x \in \{5, 48\}$$

48's too big.

want  $P = 30$ :

$$P = 5 + (5+7) + \sqrt{5^2 + (5+7)^2}$$

$$= 17 + \sqrt{25 + 144}$$

$$= 17 + \sqrt{169}$$

$$= 17 + 13 = 30$$

$$\begin{array}{r} 23 \\ 23 \\ \hline 69 \\ 46 \\ \hline 529 \end{array}$$

I'll be presenting Test 1, Fall, 2017 in class on Monday. Test yourself over the weekend. Come ready with questions, if you have any.

No, grasshopper,  $\sqrt{\pi^2 + 4}$  is not  $\pi + 2$ .  
 $\approx 3.724191778$   $\approx 5.141592654$

When you can snatch  
this pea from my hand,  
you will be ready to  
leave this place.

