

$y = 13x - 7$ Slope-Intercept form

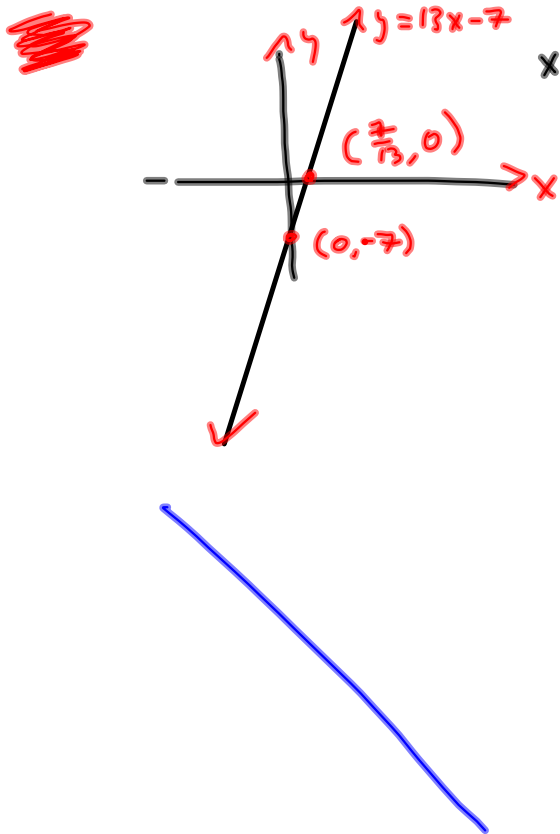
x	y
0	-7
$\frac{7}{13}$	0

$y = 13(0) - 7$

$0 = 13x - 7$

$-13x = -7$

$x = \frac{-7}{-13} = \frac{7}{13}$

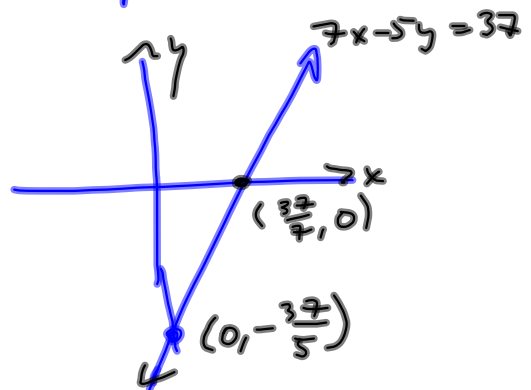


$7x - 5y = 37$

x	y
0	$-\frac{37}{5}$
$\frac{37}{7}$	0

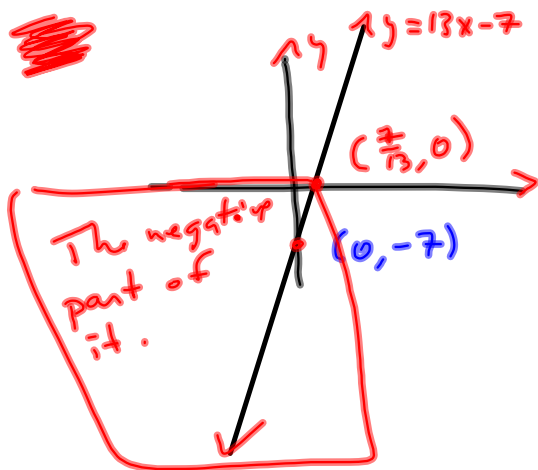
$-5y = 37$

$7x = 37$



$$y = 13x - 7$$

$$|x| = \begin{cases} x & \text{if } x \geq 0 \\ -x & \text{if } x < 0 \end{cases}$$

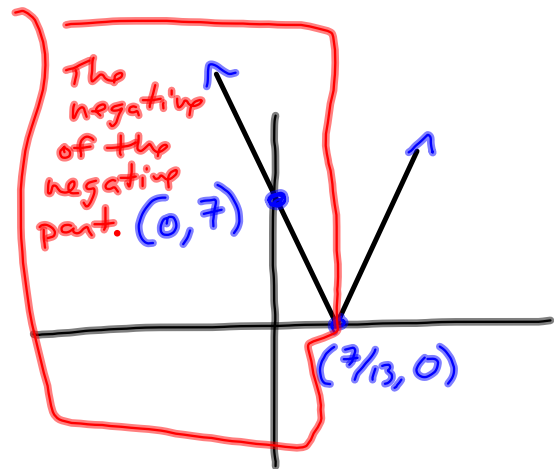


$$13x - 7 \geq 0$$

$$13x \geq 7$$

$$x \geq \frac{7}{13}$$

$$y = |13x - 7|$$



$$y = |13x - 7|$$

$$= \begin{cases} 13x - 7 & \text{if } 13x - 7 \geq 0 \\ -(13x - 7) & \text{if } 13x - 7 < 0 \end{cases}$$

$$= \begin{cases} 13x - 7 & \text{if } x \geq \frac{7}{13} \\ -13x + 7 & \text{if } x < \frac{7}{13} \end{cases}$$

Looks nicer

$$\{x \mid x \text{ is a girl}\}$$
$$= \{w \mid w \text{ is a girl}\}$$

$$3x - 7 > 5$$

$$3x > 12$$

$$x > \frac{12}{3} = 4$$

$x > 4$ condition(s) to be satisfied

$\{x \mid x > 4\}$ The collection of all real numbers satisfying the condition(s)

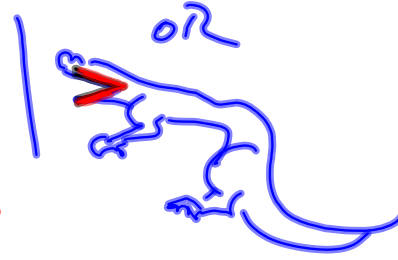
$$|3x-11| > 5$$

$$3x-11 > 5 \quad \text{OR} \quad 3x-11 < -5$$

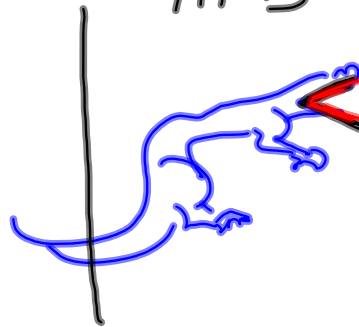
$$3x > 16 \quad \text{OR} \quad 3x < 6$$

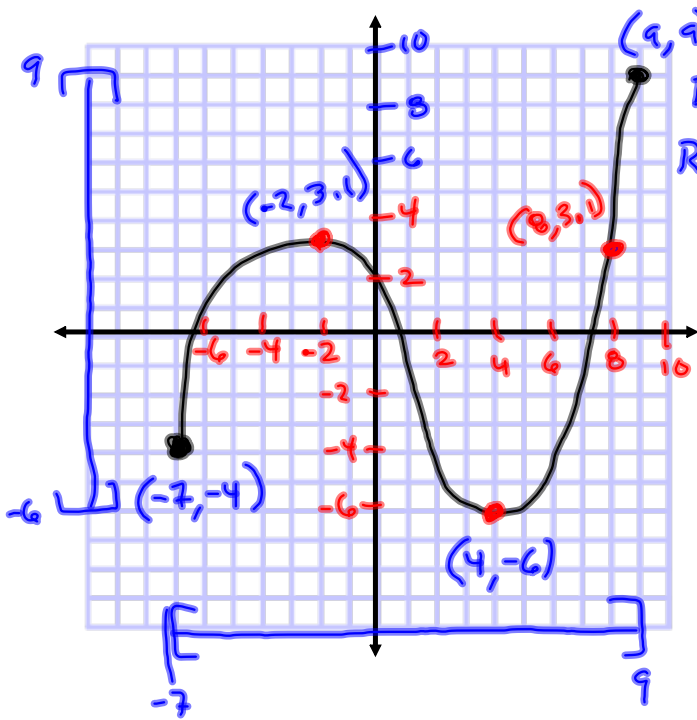
$$\left\{ x \mid x > \frac{16}{3} \quad \text{OR} \quad x < 2 \right\}$$

$(-\infty, 2) \cup (\frac{16}{3}, \infty)$



AND





Domain = $\mathcal{D} = \{x \mid f(x) \text{ is real}\}$
 Range = $\mathcal{R} = \{y \mid y = f(x) \text{ for some } x \in \mathcal{D}\}$

$\mathcal{D} = [-7, 9]$
 $\mathcal{R} = [-6, 9]$



$$f(x) = 2x - 1 \quad \text{Get } y\text{-values from } x.$$

$$y = f(x)$$

$$f(3) = 2(3) - 1 = 5 \quad (3, 5) \text{ is a point on its graph.}$$

$$f(\square) = 2\square - 1$$

$$f(\text{☺}) = 2\text{☺} - 1$$

$$f(x) = 2x - 1, \quad g(x) = x^2 + 1$$

$$f(g(x))$$

$$f(\boxed{g(x)}) = 2\boxed{g(x)} - 1$$

$$= 2g(x) - 1$$

$$= 2(x^2 + 1) - 1$$

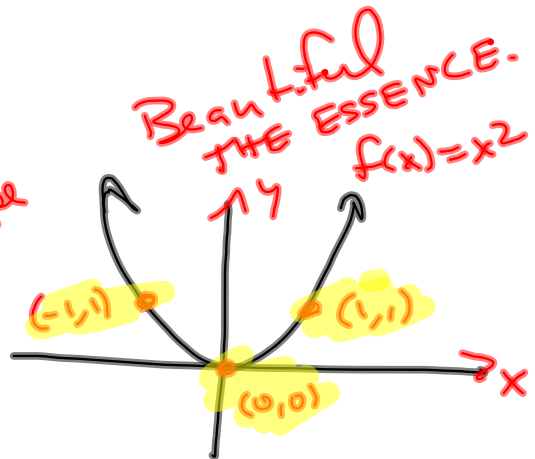
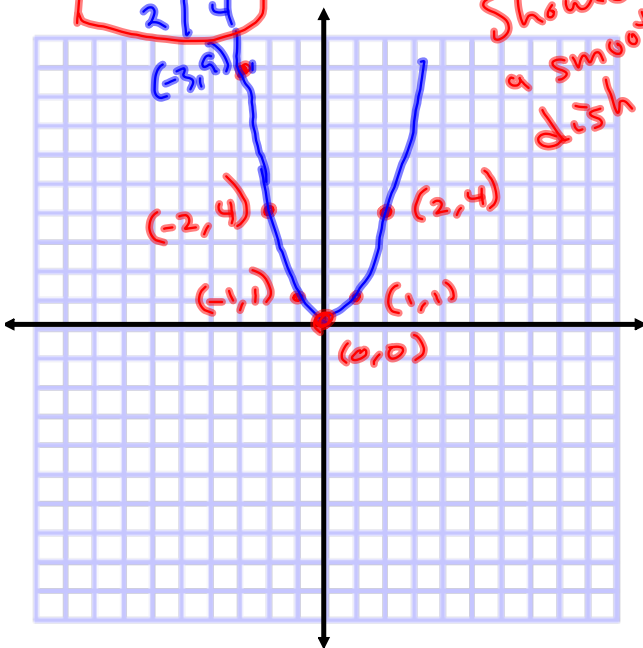
Coming
Soon!

$f(x) = x^2$, $f(x) = \sqrt{x}$, $f(x) = |x|$

x	y
-2	4
-1	1
0	0
1	1
2	4

$(-2)^2 = 4$
 $(-1)^2 = 1$
 $0^2 = 0$

Should be a smooth, dish shape

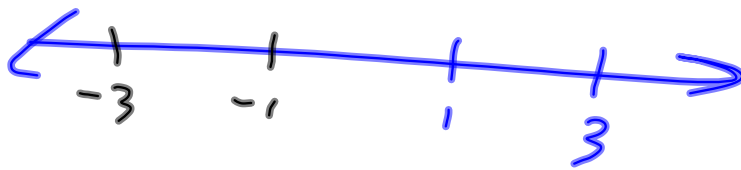


In the sequel, we build graphs by moving (& sketching) this basic graph.

$$-2x \leq 7$$

$$\frac{-2x}{-2} \geq \frac{7}{-2}$$

$$x \leq -\frac{7}{2}$$



$$\frac{1}{-1} \geq \frac{3}{1}$$
$$-1 \geq 3$$