

10-29-13
3:17:5

① (3,5)(3,7) Not a function

② $f(x) = \sqrt{3x-12} \geq 0$

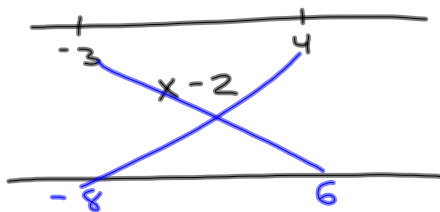
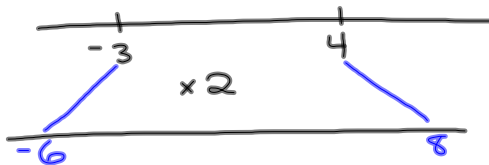
Find domain

$$\begin{aligned} 3x-12 &\geq 0 \\ +12 &+12 \\ \hline 3x &\geq 12 \\ \mathbb{R}: x &\geq 4 \end{aligned}$$

③ $f(x) = \sqrt{-2x+4} \geq 0$

Find domain.

$$\begin{aligned} -2x+4 &\geq 0 \\ -4 &-4 \\ \hline -2x &\geq -4 \\ \frac{-2x}{-2} &= \frac{-4}{-2} \\ x &\leq 2 \end{aligned}$$



$f(x) = x^2 - 9$

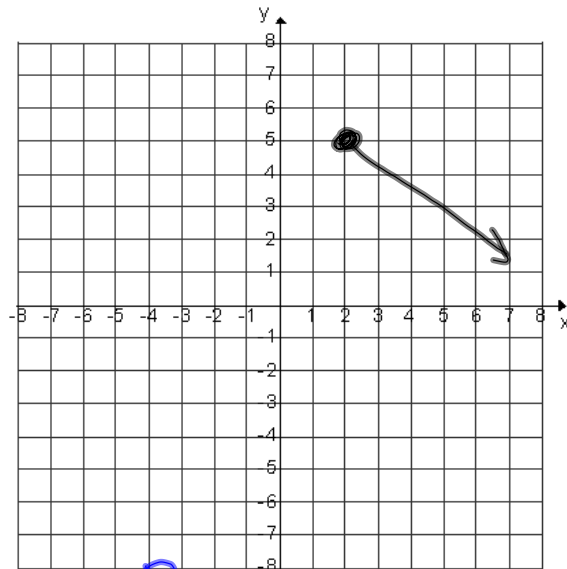
Domain: \mathbb{R}

$f(x) = \frac{x^3}{(x-2)(x+1)}$

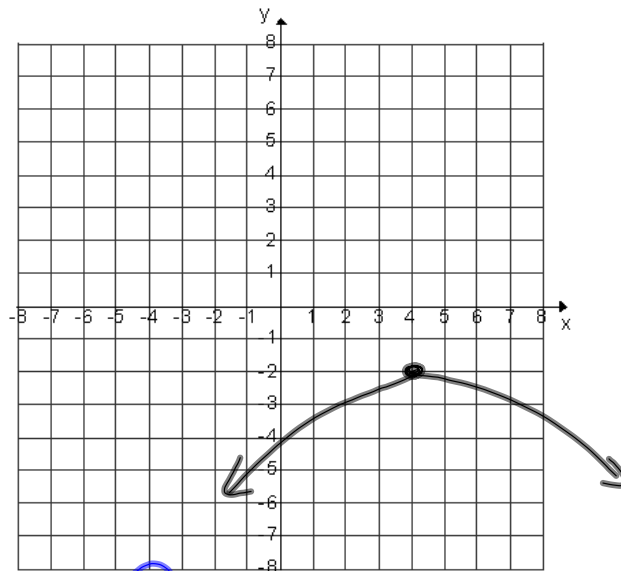
Domain: \mathbb{R} except $x \neq 2, -1$

Interval Notation

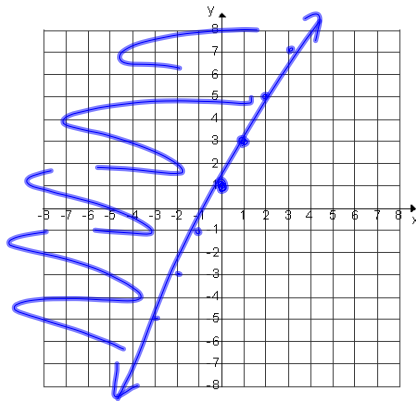
- ① $x > 4$ $(4, \infty)$
- ② $2 < x \leq 10$ $(2, 10]$
- ③ $x \leq 5$ $(-\infty, 5]$



Domain: $\mathbb{R}: x \geq 2$
 Range: $\mathbb{R}: y \leq 5$

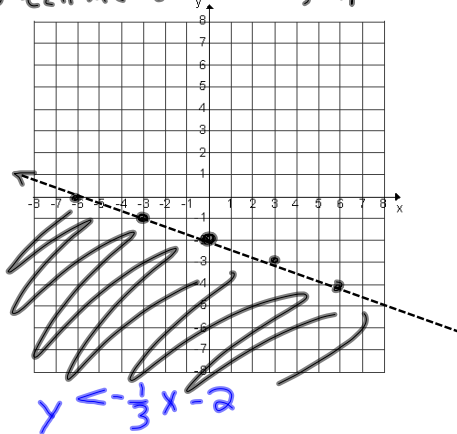


Domain: \mathbb{R}
 Range: $\mathbb{R}: y \leq -2$



Graph $y \geq 2x + 1$

You tell me what is graphed.



$$f(x) = 2x + 1$$

$$g(x) = 8x - 1$$

$$f(f(5x))$$

$$\downarrow$$

$$2(5x) + 1$$

$$f(10x + 1)$$

$$2(10x + 1) + 1$$

$$20x + 2 + 1$$

$$20x + 3$$

$$g(f(x))$$

$$g(2x + 1)$$

$$8(2x + 1) - 1$$

$$16x + 8 - 1$$

$$16x + 7$$

Give inverse of $f(x) = 3x - 1$

$$\textcircled{1} \quad y = 3x - 1$$

$$\textcircled{2} \quad x = \frac{y + 1}{3}$$

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

$$f^{-1}(x) = \frac{x + 1}{3}$$

$\{(2,4), (2,8)\}$ Not a function

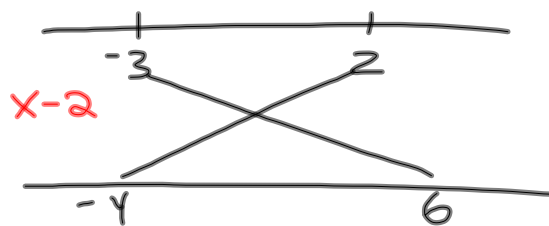
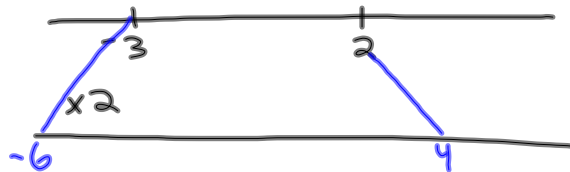
$$f(x) = \frac{4x^3}{(x-2)(x+10)}$$

Find domain

Domain: \mathbb{R} except $x \neq 2, -10$

$$f(x) = \sqrt{2x-8} \geq 0$$
$$\frac{\begin{array}{cc} +8 & +8 \\ \hline 2x & \geq 8 \end{array}}{\mathbb{R}: x \geq 4}$$

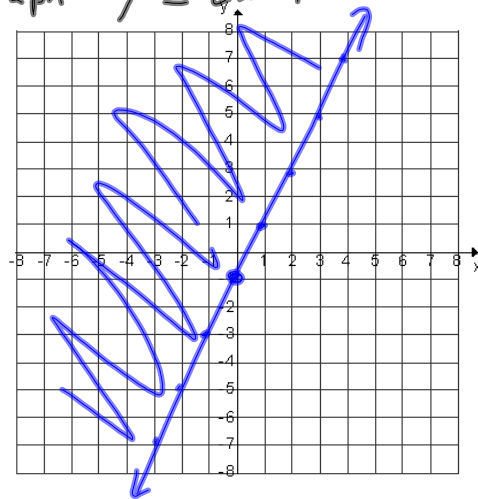
$$f(x) = \sqrt{-2x+10} \geq 0$$
$$\frac{\begin{array}{cc} -10 & -10 \\ \hline -2x & \geq -10 \\ \hline -2 & -2 \end{array}}{x \leq 5}$$



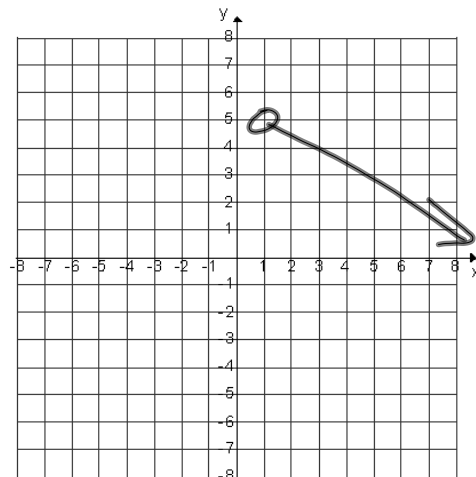
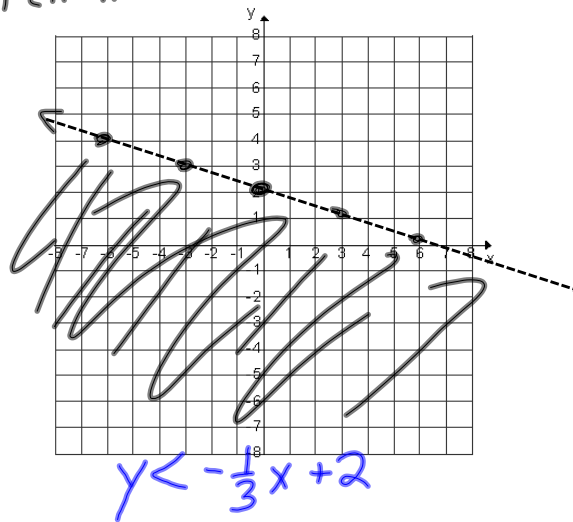
$$f(x) = x^2 - 25$$

Domain: \mathbb{R}

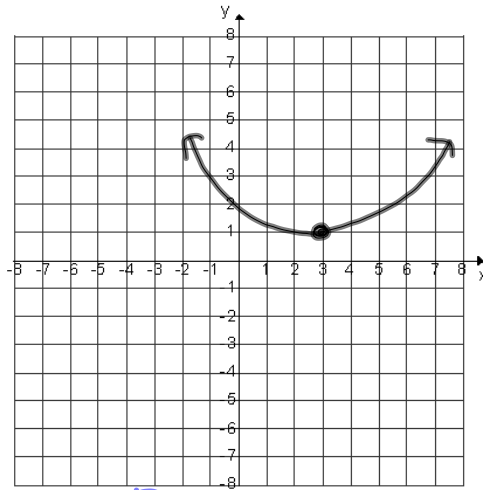
Graph $y \geq 2x - 1$



Tell me what I graphed



Domain: \mathbb{R} : $x > 1$
 Range: \mathbb{R} : $y < 5$



Domain: \mathbb{R}
 Range: $\mathbb{R}: y \geq 1$

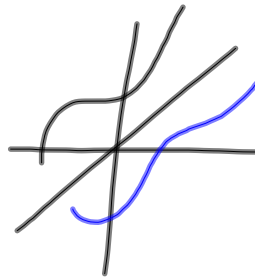
Give inverse $f(x) = 5x - 1$

① $y = 5x - 1$

② $x = 5y - 1$

$$\frac{x+1}{5} = \frac{5y}{5}$$

$$f^{-1}(x) = \frac{x+1}{5}$$



Give interval notation:

① $x \geq 4$ $[4, \infty)$

② $-6 < x \leq 2$ $(-6, 2]$

③ $x < -6$ $(-\infty, -6)$

$$f(x) = 5n + 1$$

$$f(3n^2 + 1) = 5(3n^2 + 1) + 1$$

$$15n^2 + 5 + 1$$

$$15n^2 + 6$$