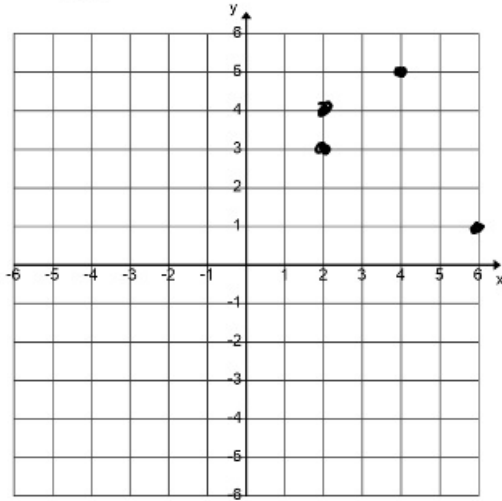


10-18-19 1st Trig



(2, 3) (4, 5) (6, 1) (2, 4)

② $f(x) = \frac{6x-1}{x+2}$

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

③ $f(x) = \sqrt{x-8}$

Domain: \mathbb{R} : $x \geq 8$

④ $f(x) = x - 2$ \mathbb{R}

⑤ Give the inverse of

$f(x) = \frac{x}{2} - 5$

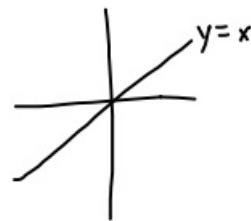
$y = \frac{x}{2} - 5$

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

$\frac{+5}{+5} \quad \frac{+5}{+5}$
 $2(x+5) = \frac{y}{2} \cdot 2$

$2x+10 = y$

$f^{-1}(x) = 2x+10$



$$\textcircled{6} \quad f(x) = 3x - 5 \quad g(x) = 8x - 1$$

$$\text{a.) } f(g(10))$$

$$g(10) = 8 \cdot 10 - 1 \\ = 79$$

$$f(79) = 3 \cdot 79 - 5 \\ = 237 - 5 \\ = 232$$

$$\text{b.) } f(g(x))$$

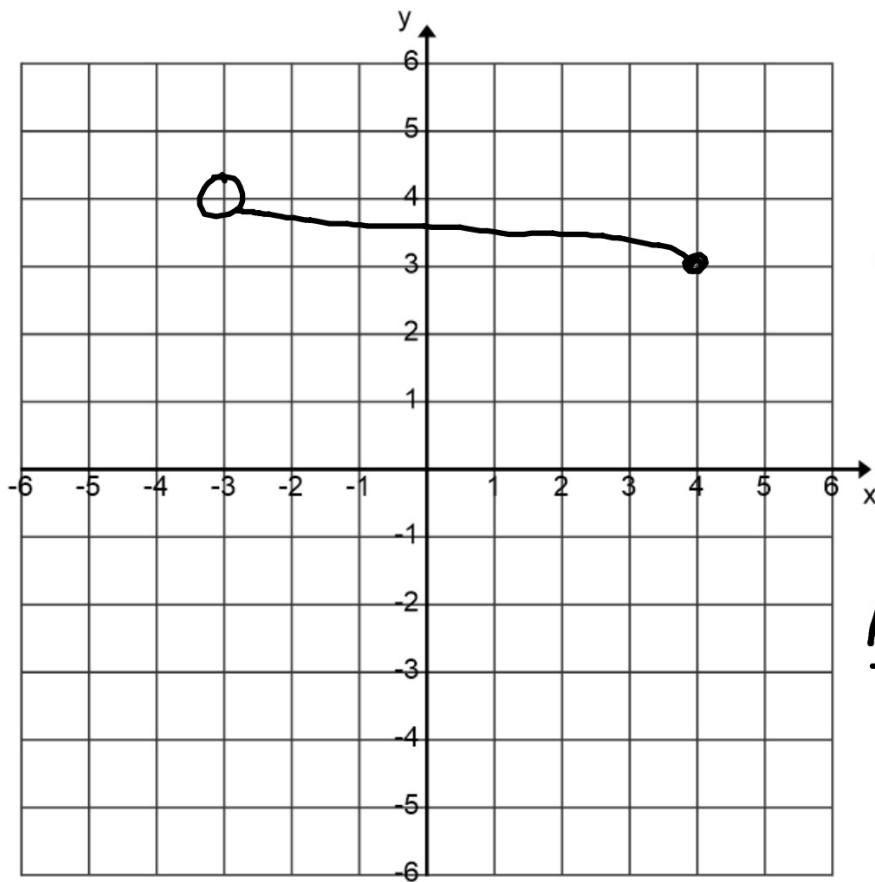
$$f(8x-1) = 3 \cdot (8x-1) - 5 \\ 24x - 3 - 5 \\ 24x - 8$$

$\textcircled{7}$ Give interval notation for

$$\text{a.) } x \geq 8 \quad \leftarrow \begin{array}{c} \bullet \\ 8 \end{array} \rightarrow \quad [8, \infty)$$

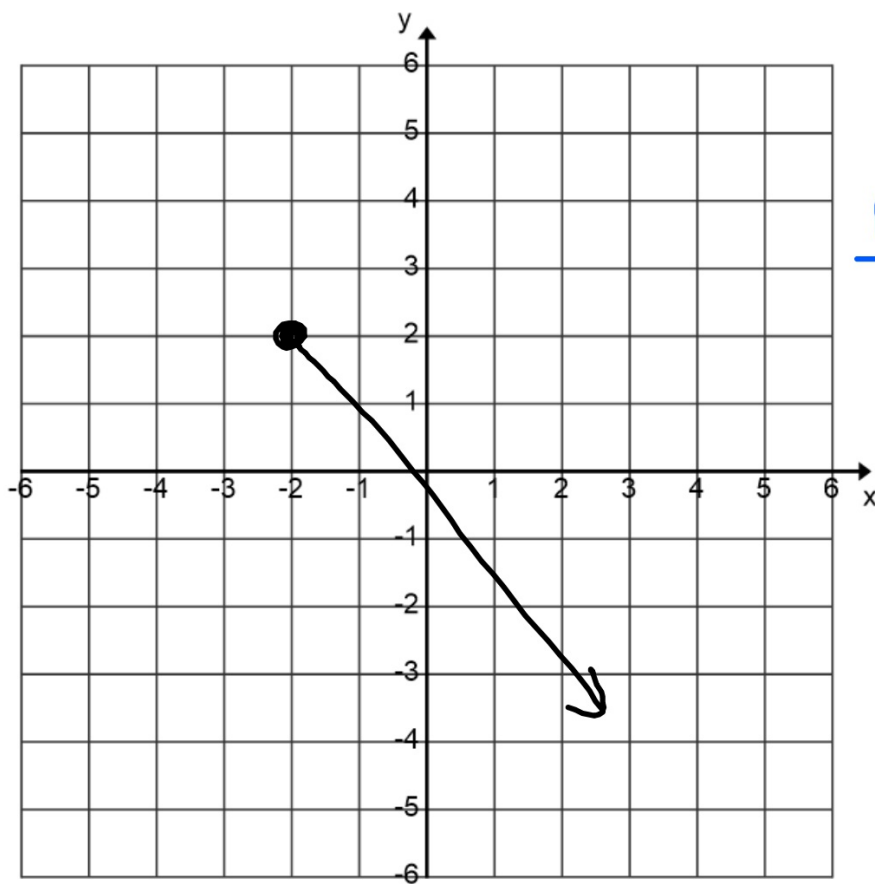
$$\text{b.) } -3 < x \leq 5 \quad (-3, 5]$$

$$\text{c.) } x < 10 \quad \leftarrow \begin{array}{c} \oplus \\ 10 \end{array} \rightarrow \quad (-\infty, 10) \quad \vdots$$



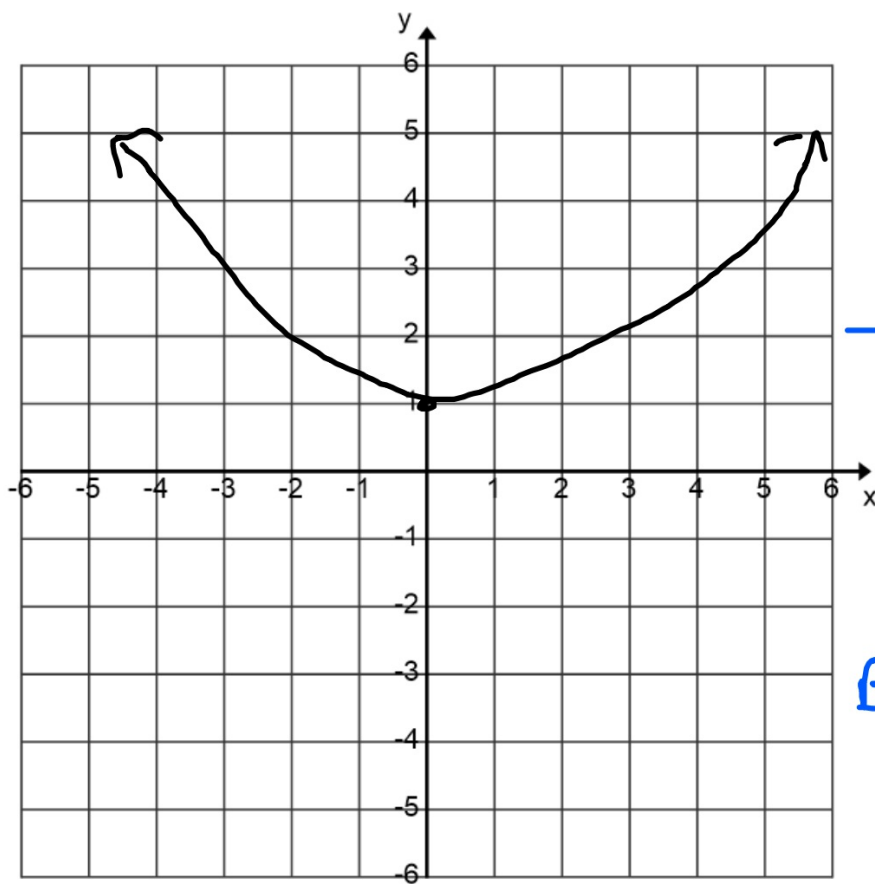
Domain
 $-3 < x \leq 4$

Range
 $3 \leq y < 4$



Domain
 $x \geq -2$

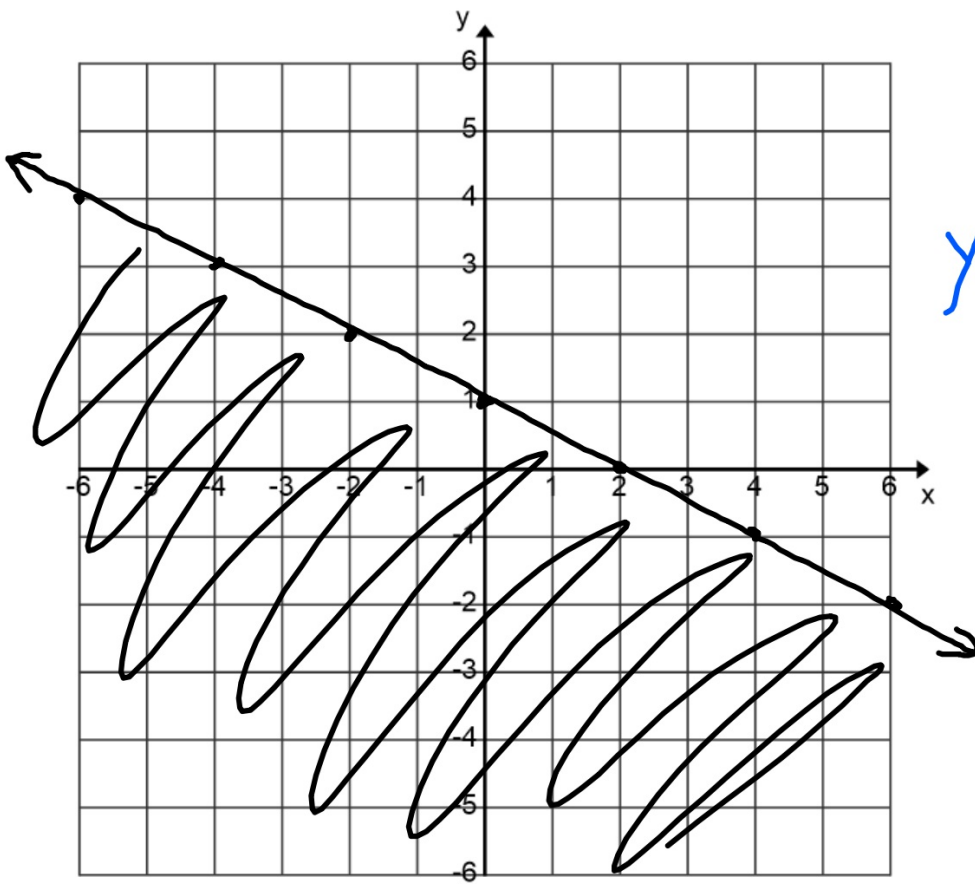
Range
 $y \leq 2$

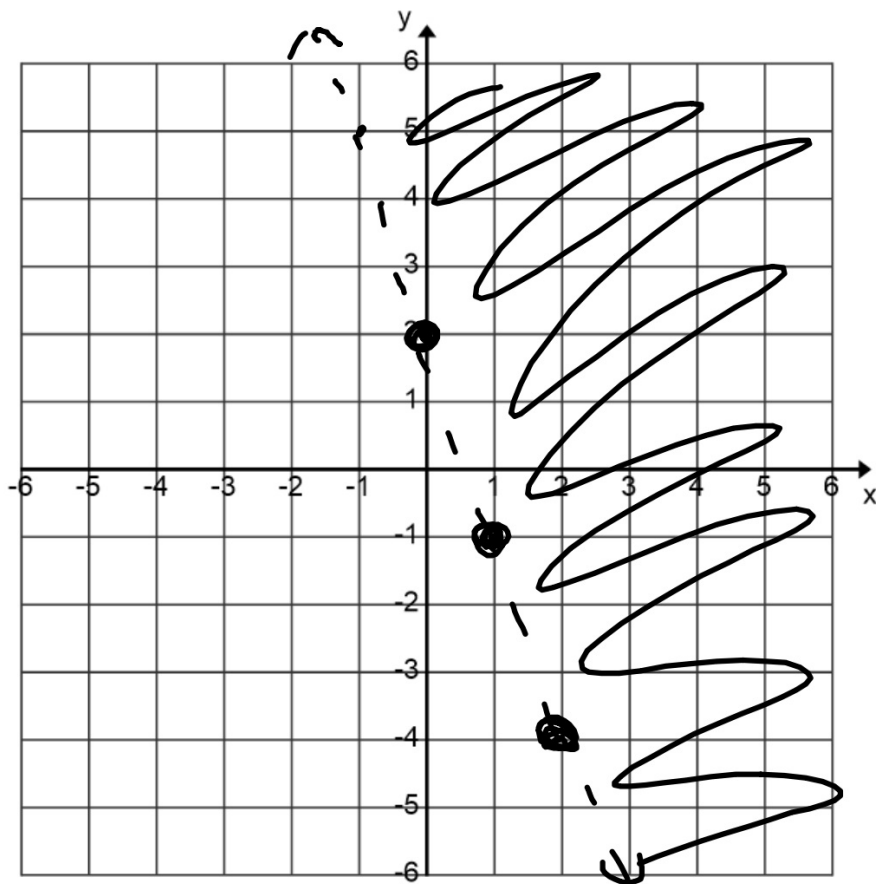


Domain
 \mathbb{R}

Range
 $y \geq 1$

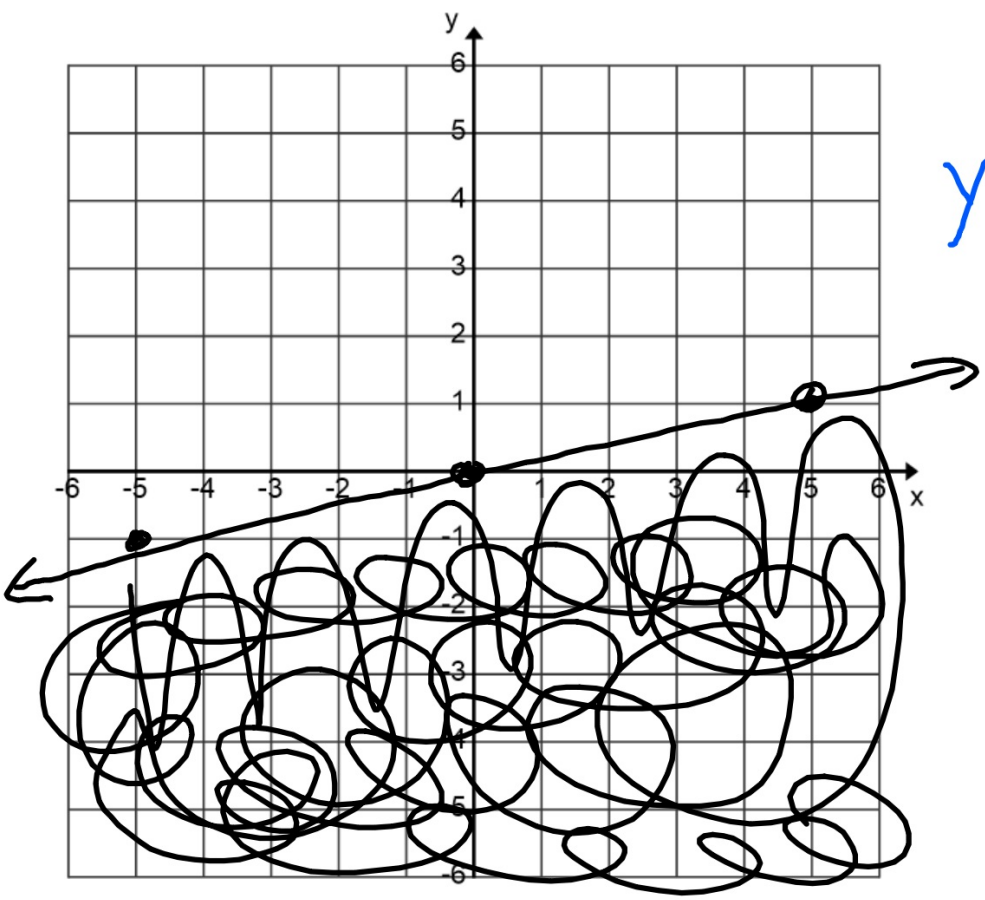
$$y \leq -\frac{1}{2}x + 1$$





$$y > -3x + 2$$

$$y \leq \frac{1}{5}x$$



10-18-19 3rd Trig

$$\textcircled{1} f(x) = \frac{3x+6}{x-2}$$

\mathbb{R} except $x \neq 2$

$$\textcircled{2} f(x) = \sqrt{x-5}$$

$$\begin{array}{r} x-5 \geq 0 \\ \hline +5 \quad +5 \\ \mathbb{R}: x \geq 5 \end{array}$$

$$\textcircled{3} f(x) = 3x+12$$

\mathbb{R}

$$\textcircled{4} f(x) = 3x+2 \quad g(x) = 5x-1$$

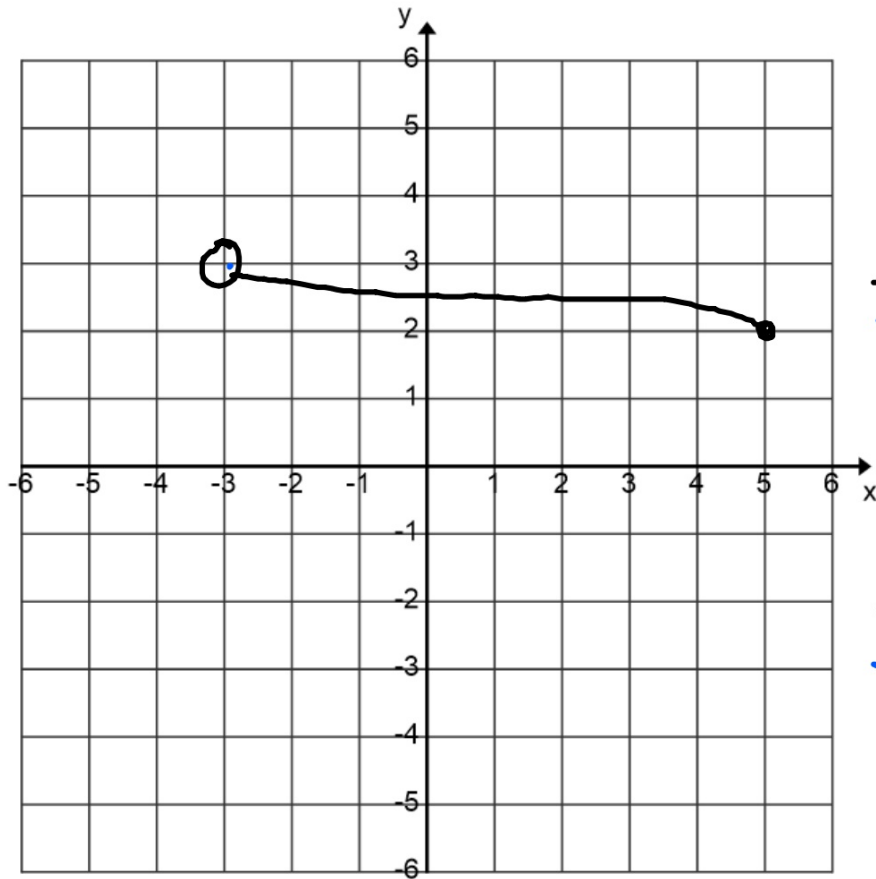
a.) $f(g(10))$

$$\begin{aligned} g(10) &= 5 \cdot 10 - 1 \\ &= 49 \end{aligned}$$

$$\begin{aligned} f(49) &= 3 \cdot 49 + 2 \\ &= 149 \end{aligned}$$

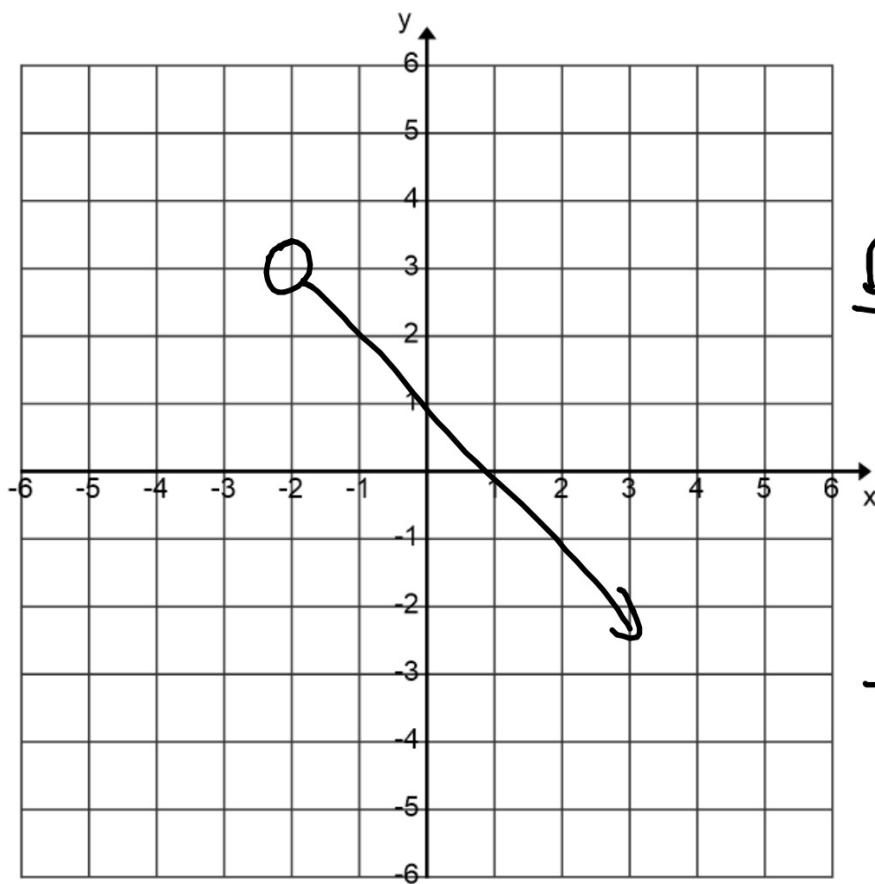
b.) $f(g(x))$

$$\begin{aligned} f(5x-1) &= 3 \cdot (5x-1) + 2 \\ &= 15x - 3 + 2 \\ &= 15x - 1 \end{aligned}$$



Domain
 $-3 < x \leq 5$

Range
 $2 \leq y < 3$

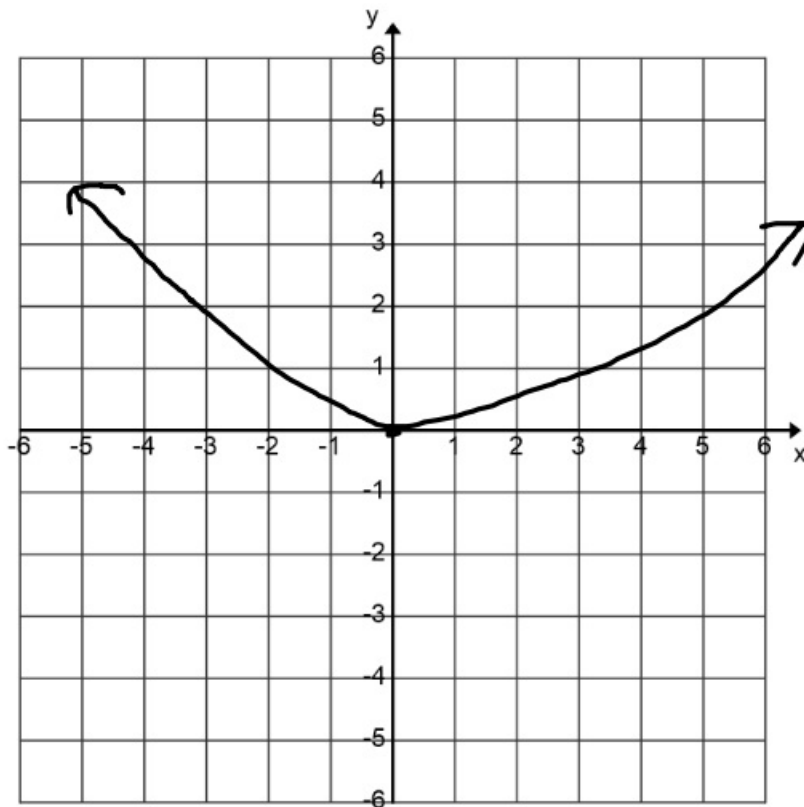


Domain

$$x > -2$$

Range

$$y < 3$$




Domain
 \mathbb{R}

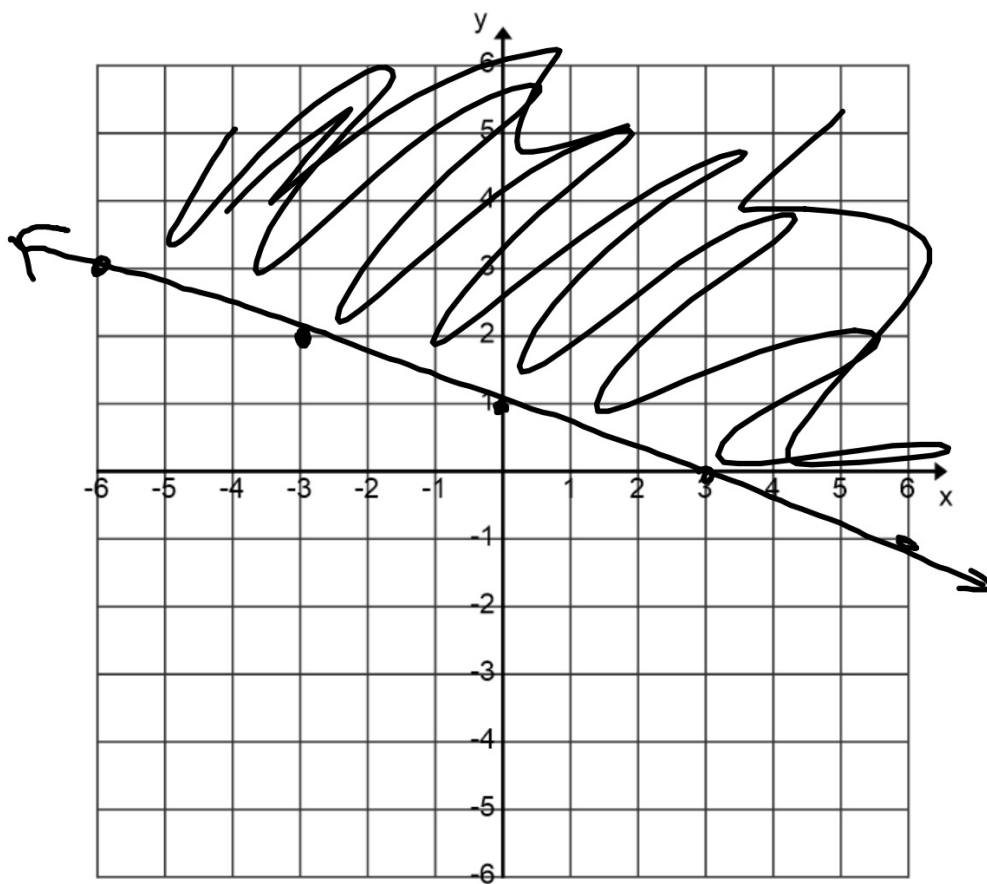
Range
 $y \geq 0$

⑧ Give interval notation for

a.) $-2 \leq x < 6$
 $[-2, 6)$

b.) $x \geq 3$ 
 $[3, \infty)$

c.) $x < 4$ 
 $(-\infty, 4)$



$$y \geq -\frac{1}{3}x + 1$$

10-18-19 4th Trig

$$\textcircled{1} f(x) = \frac{x+8}{x-2}$$

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

$$\textcircled{2} f(x) = \sqrt{x-3}$$

$$\begin{array}{r} x-3 \geq 0 \\ +3 \quad +3 \\ \hline \mathbb{R}: x \geq 3 \end{array}$$

$$\textcircled{3} f(x) = x - 10$$

\mathbb{R}

$$\textcircled{4} f(x) = 5x - 2 \quad g(x) = 3x - 1$$

$$\text{a) } f(g(10))$$

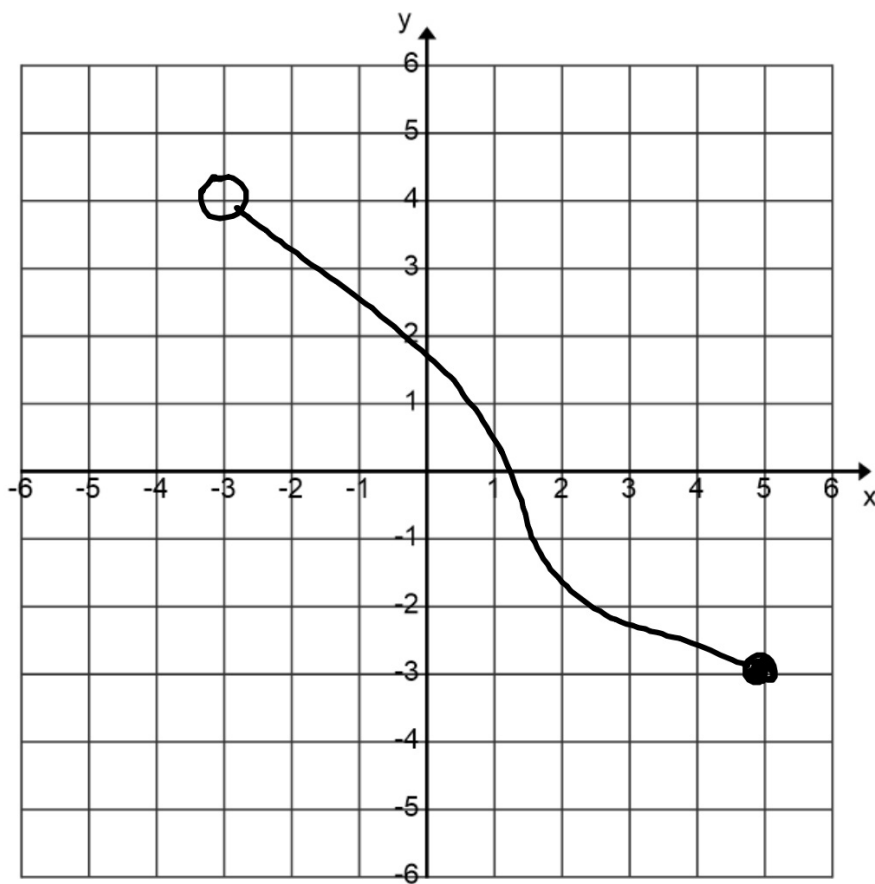
$$\begin{array}{c} \downarrow \\ f(29) = 5 \cdot 29 - 2 \\ = 143 \end{array}$$

$$\begin{array}{l} g(10) = 3 \cdot 10 - 1 \\ = 29 \end{array}$$

$$\text{b) } f(g(x))$$

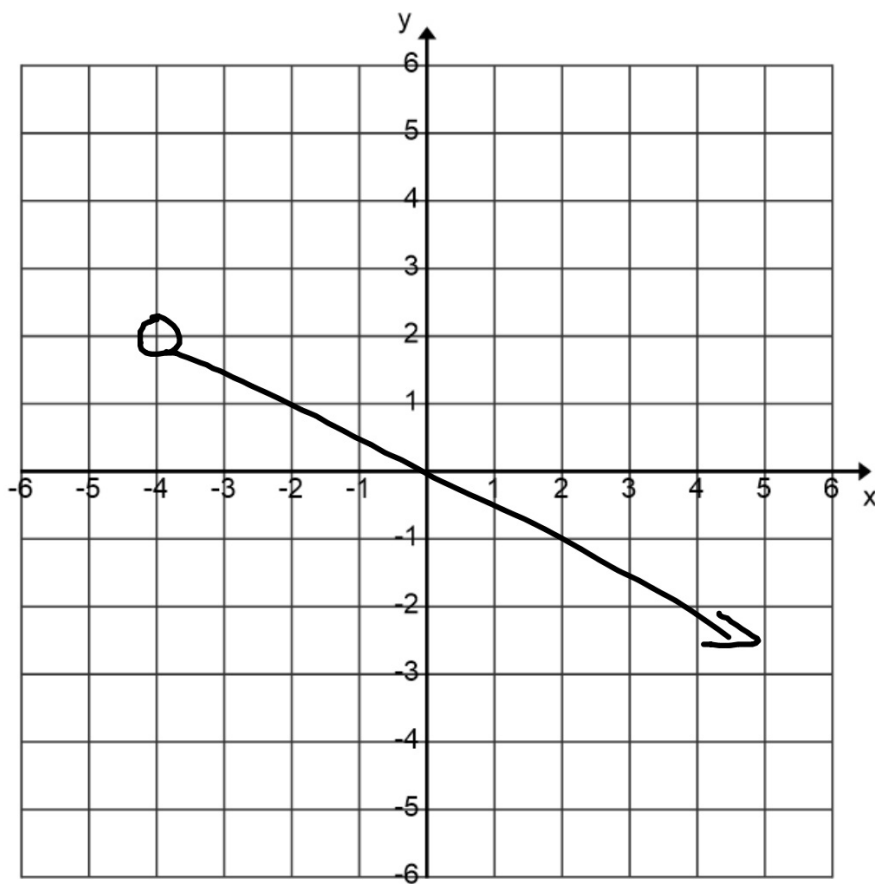
$$\begin{array}{c} \downarrow \\ f(3x-1) = 5 \cdot (3x-1) - 2 \end{array}$$

$$\begin{array}{l} 15x - 5 - 2 \\ 15x - 7 \end{array}$$



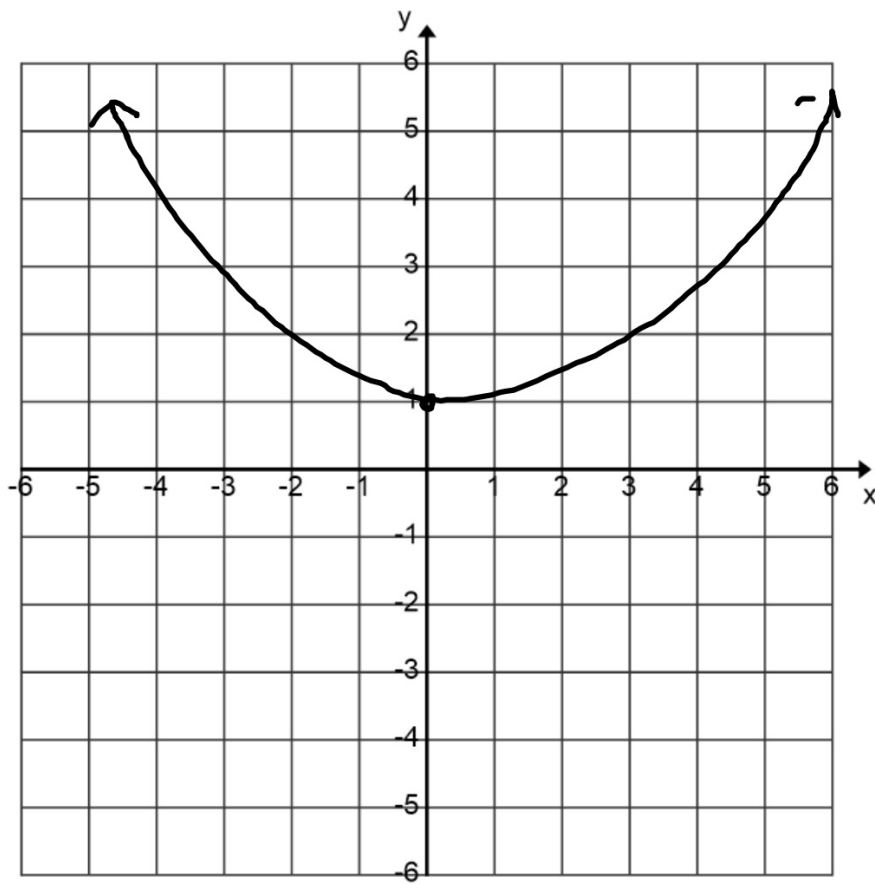
Domain
 $-3 < x \leq 5$

Range
 $-3 \leq y < 4$



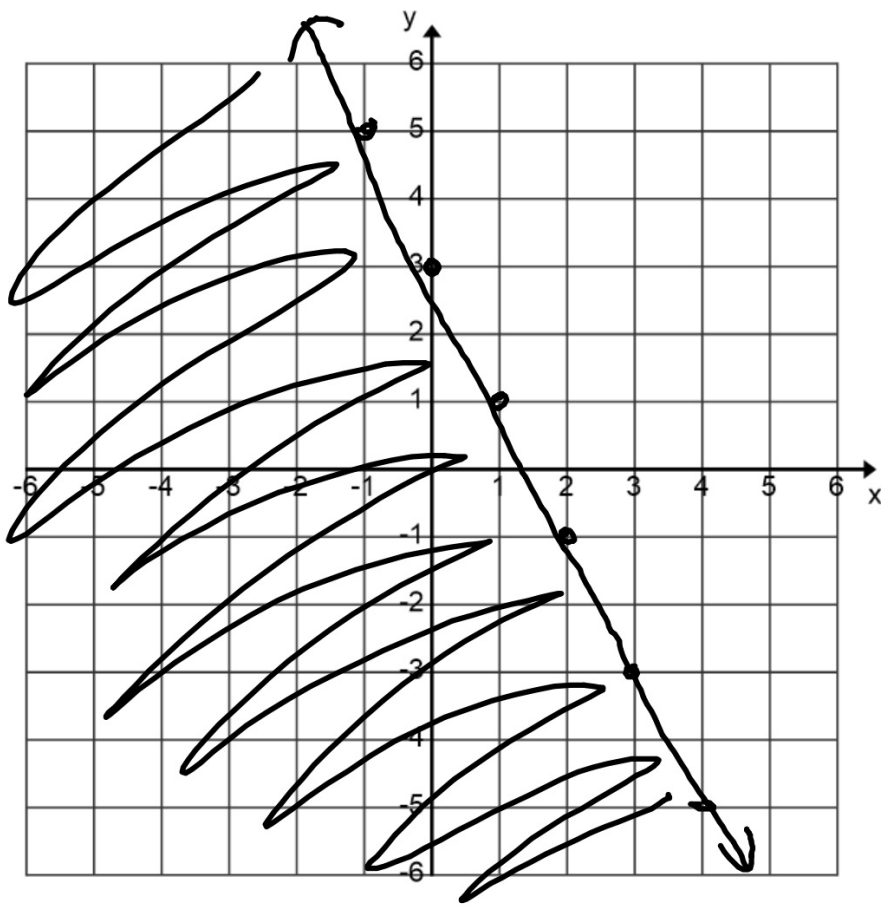
Domain
 $x > -4$

Range
 $y < 2$

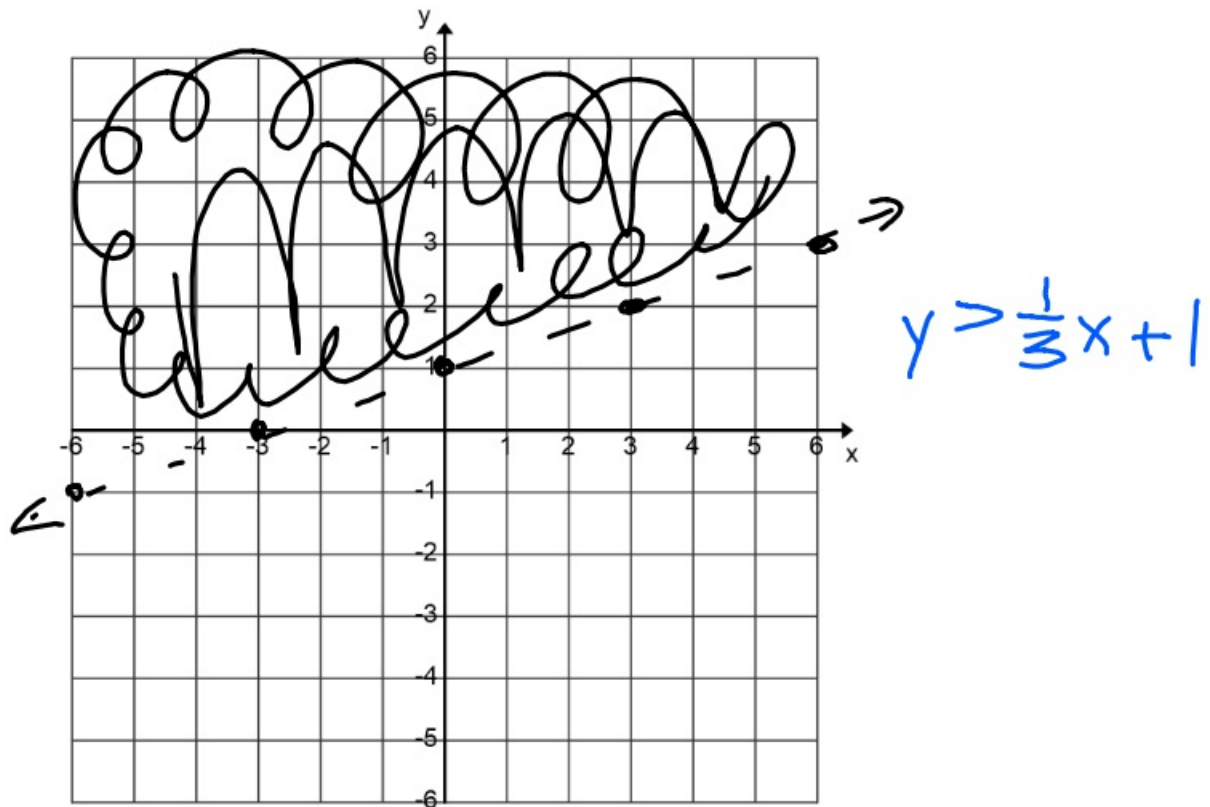


Domain
 \mathbb{R}

Range
 $y \geq 1$



$$y < -2x + 3$$



⑩ Give the interval notation for each.

a.) $-2 < x \leq 10$
 $(-2, 10]$

b.) $x > 15$

$(15, \infty)$

c.) $x < 10$

$(-\infty, 10)$