

10-9-17 1st Trig

Ch. 3 Test Thursday

$$f(x) = 6x^2 - 5x$$

$$\begin{aligned} \textcircled{1} f(-1) &= 6 \cdot (-1)^2 - 5(-1) \\ &= 6 \cdot 1 + 5 \\ &= 11 \end{aligned}$$

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

$$f(f(2))$$



$$f(-12) = -3(-12)^2 = -12$$

$$-3 \cdot 144$$

$$-432$$

$$\textcircled{3} f(x) = 8x - 1$$

$$f(2x+10) = 8 \cdot (2x+10) - 1$$

$$16x + 80 - 1$$

$$16x + 79$$

Domains

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

$$\begin{array}{r} 2x+5 \neq 0 \\ -5 \quad -5 \\ \hline 2x \neq -5 \\ \frac{2x}{2} \neq \frac{-5}{2} \\ x \neq -2\frac{1}{2} \end{array}$$

\mathbb{R} except $x \neq -2.5$

$$\textcircled{5} f(x) = 8x+8$$

\mathbb{R}

$$\textcircled{6} f(x) = \sqrt{2x-1}$$

$$\begin{array}{r} 2x-1 \geq 0 \\ +1 \quad +1 \\ \hline 2x \geq 1 \\ \frac{2x}{2} \geq \frac{1}{2} \end{array}$$

$\mathbb{R}: x \geq \frac{1}{2} (.5)$

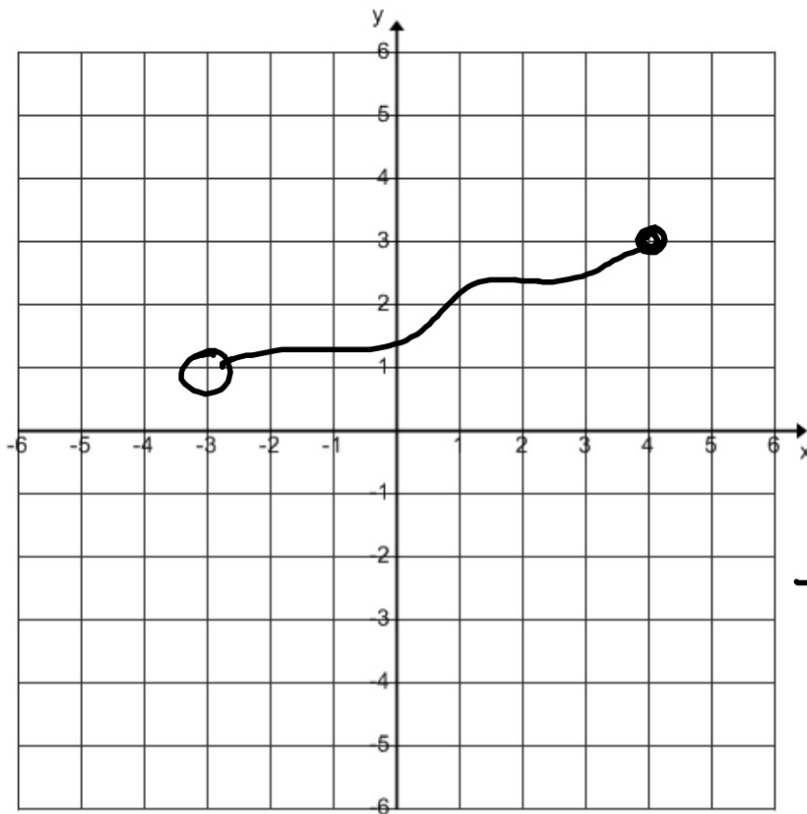
$$\textcircled{7} f(x) = \sqrt{-2x-10}$$

$$\begin{array}{r} -2x-10 \geq 0 \\ +10 \quad +10 \\ \hline -2x \geq 10 \\ \frac{-2x}{-2} \geq \frac{10}{-2} \\ x \leq -5 \end{array}$$

$\mathbb{R}: x \leq -5$

⑧ $f(x) = -2x - 8$
 \mathbb{R}

⑨



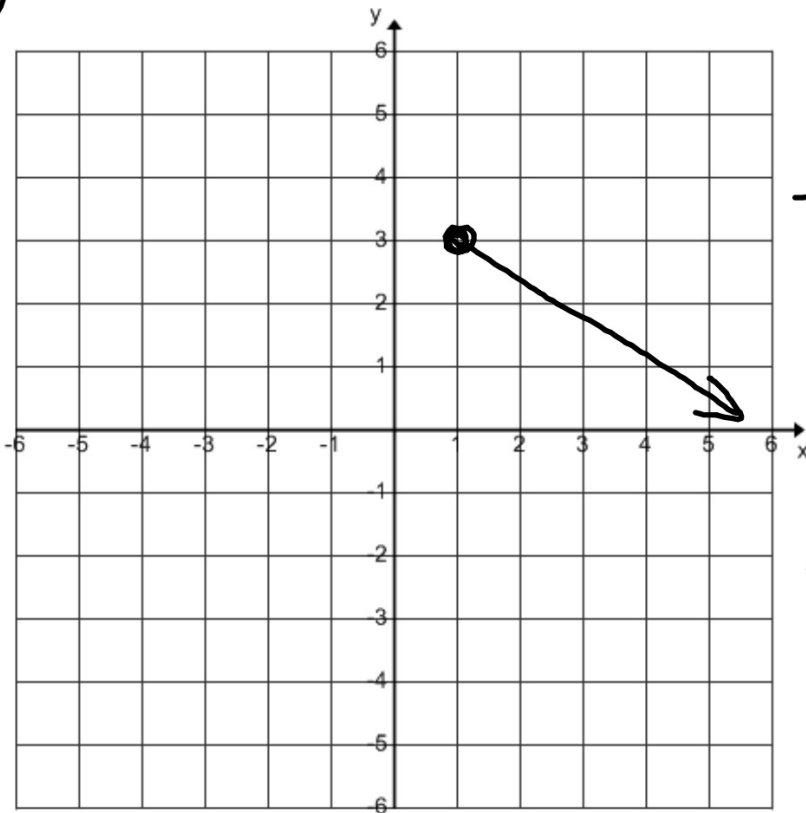
Domain

$$-3 < x \leq 4$$

Range

$$1 < y \leq 3$$

10



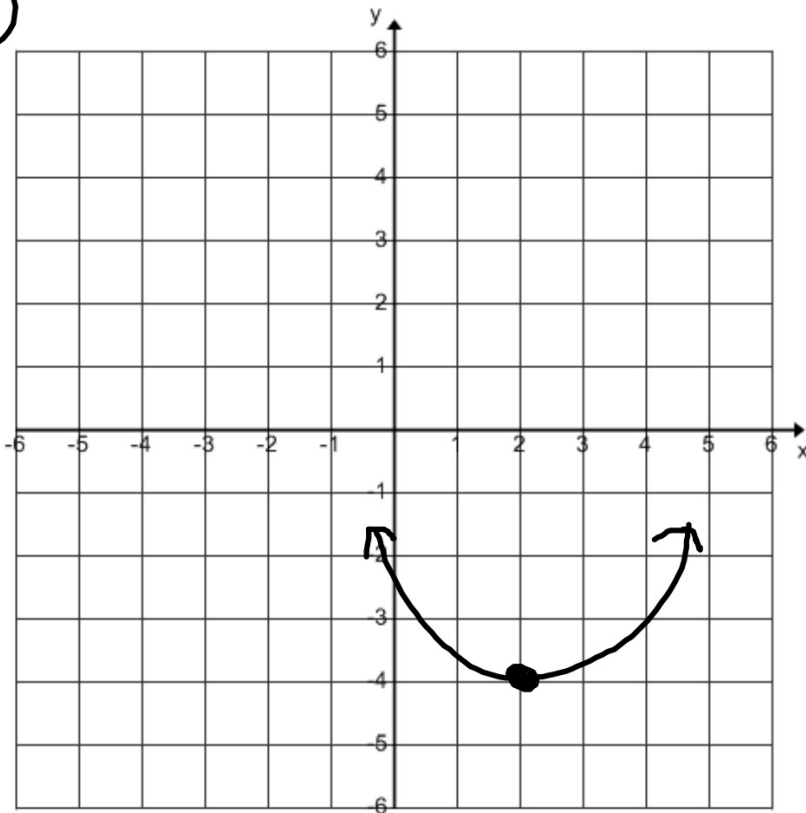
Domain

$$x \geq 1$$

Range

$$y \leq 3$$

11



Domain
 \mathbb{R}

Range
 $y \geq -4$

10-9-17 3rd Try

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

$$\textcircled{1} f(-2) = (-2)^2 - -2$$

4 + 2
6

$$\textcircled{2} f(x+3) = \boxed{(x+3)}^2 - \boxed{(x+3)}$$

$$(x+3)^2 = (x+3)(x+3)$$

$x^2 + 6x + 9$

↓

$$x^2 + 6x + 9 - x - 3$$

$$x^2 + 5x + 6$$

$$\textcircled{3} f(x) = 5x - 10$$

$$f(\textcircled{f(x)}) =$$

↓

$$f(5x-10) = 5 \cdot \boxed{(5x-10)} - 10$$

$$25x - 50 - 10$$

$$25x - 60$$

Domain

$$\textcircled{4} f(x) = \frac{x^8 - 7}{3x - 4}$$

$$3x - 4 \neq 0$$

$$\begin{array}{r} +4 \quad +4 \\ \hline \end{array}$$

$$\frac{3x}{3} \neq \frac{4}{3}$$

$$x \neq \frac{4}{3}$$

\mathbb{R} except $x \neq \frac{4}{3}$

$$\textcircled{5} f(x) = 8x - 8$$

\mathbb{R}

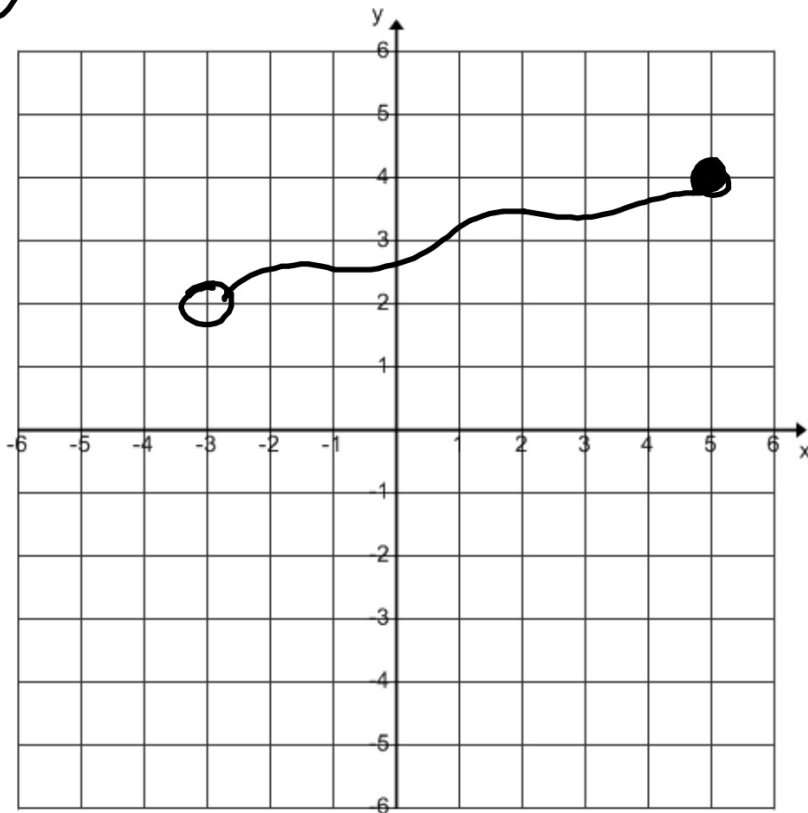
$$\textcircled{6} f(x) = \sqrt{3x - 6}$$

$$\begin{array}{r} 3x - 6 \geq 0 \\ +6 \quad +6 \\ \hline \end{array}$$

$$\frac{3x}{3} \geq \frac{6}{3}$$

$$\mathbb{R}: x \geq 2$$

7



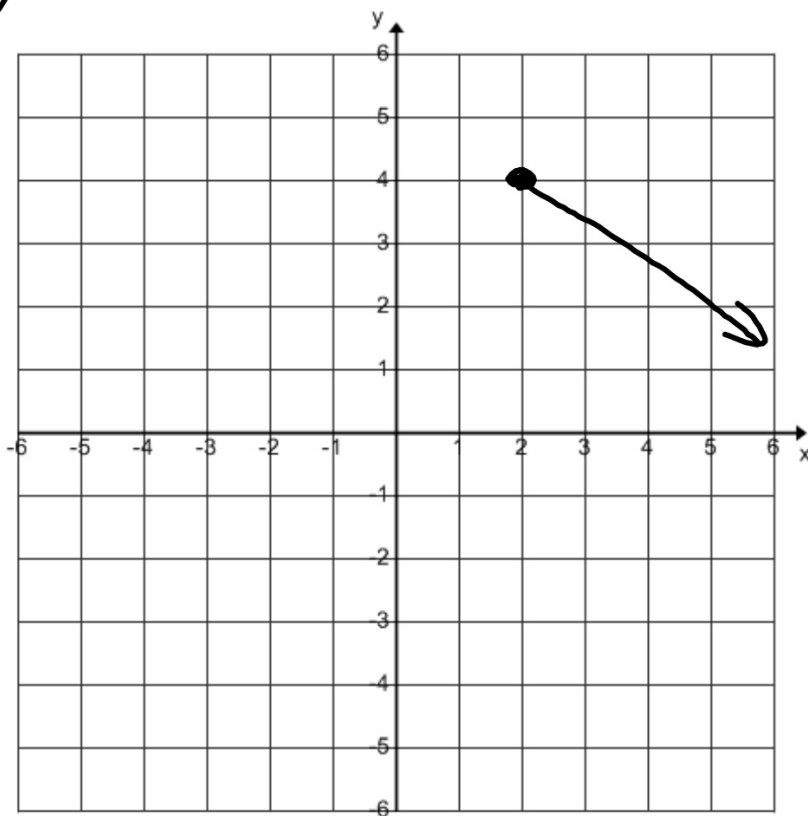
Domain

$$-3 < x \leq 5$$

Range

$$2 < y \leq 4$$

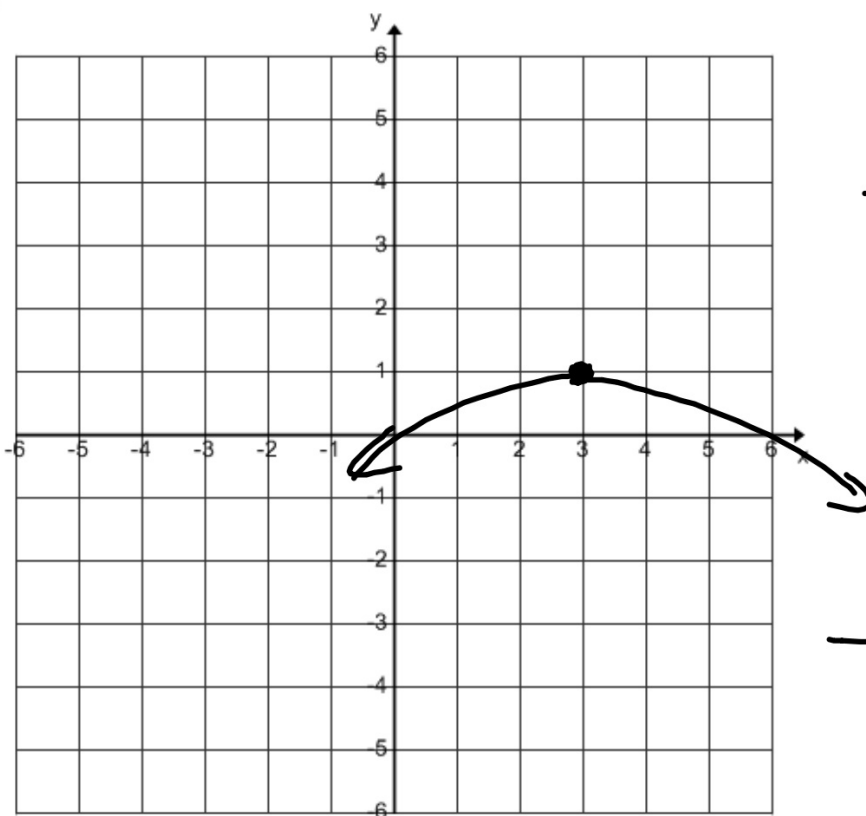
⑧



Domain
 $x \geq 2$

Range
 $y \leq 4$

9



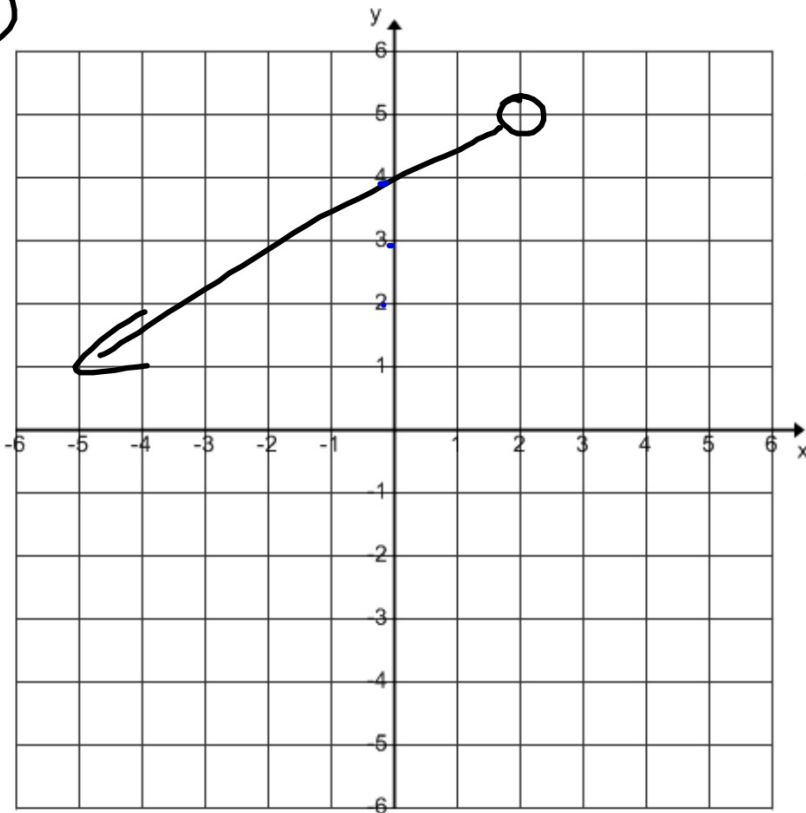
Domain

\mathbb{R}

Range

$y \leq 1$

10



Domain

$$x < 2$$

Range

$$y < 5$$

10-9-17 4th Trj

$$\textcircled{1} f(x) = x^2 - 2x$$

$$f(-2) = (-2)^2 - 2(-2)$$
$$4 + 4$$
$$8$$

$$\textcircled{2} f(x) = 3x - 4$$

$$f(5x+1) = 3 \cdot (5x+1) - 4$$
$$15x + 3 - 4$$
$$15x - 1$$

Domain

$$\textcircled{3} f(x) = \frac{x^8 + x^7 + 1}{x+2} \neq 0$$

$$x+2 \neq 0$$
$$\begin{array}{r} -2 - 2 \\ \hline x \neq -2 \end{array}$$

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

$$\textcircled{4} f(x) = 8x - 8$$

\mathbb{R}

$$\textcircled{5} f(x) = \sqrt{3x-2}$$

$$3x-2 \geq 0$$

$$\begin{array}{r} +2 \quad +2 \\ \hline \end{array}$$

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

$$\text{A: } x \geq \frac{2}{3}$$

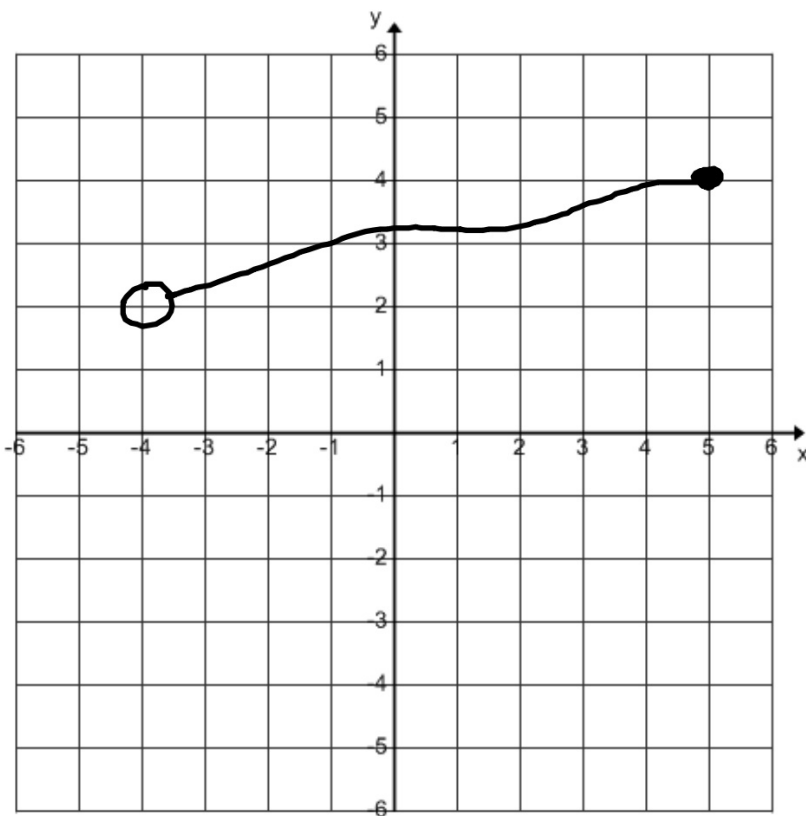
$$\textcircled{6} f(x) = \sqrt{-2x-4}$$

$$-2x-4 \geq 0$$

$$\begin{array}{r} +4 \quad +4 \\ \hline \end{array}$$

$$\frac{-2x}{-2} = \frac{4}{-2}$$

$$\text{A: } x \leq -2 \quad x \leq -2$$

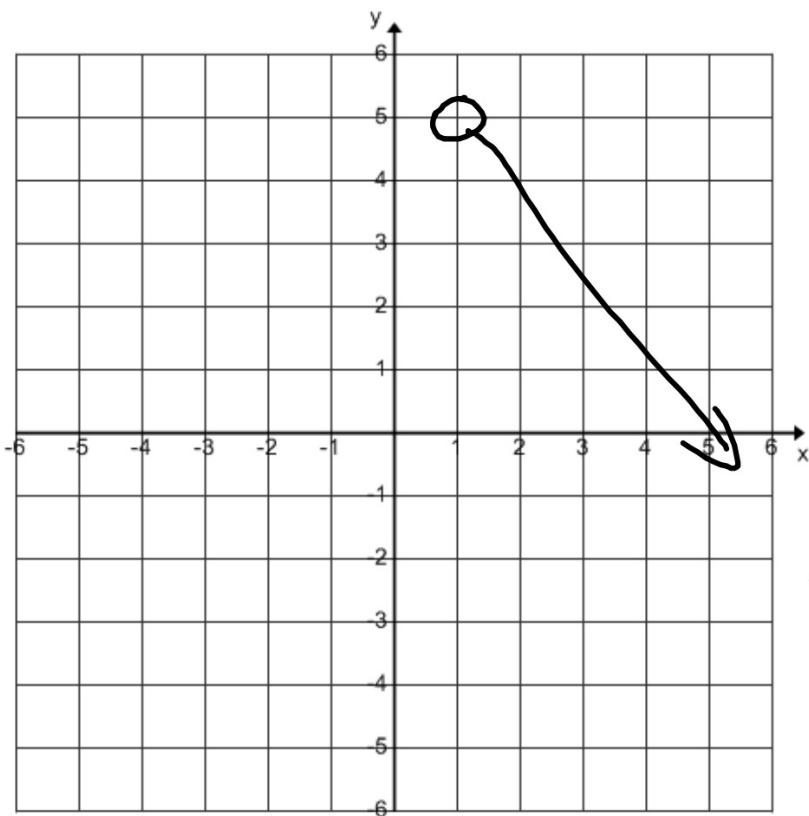


Domain

$$-4 < x \leq 5$$

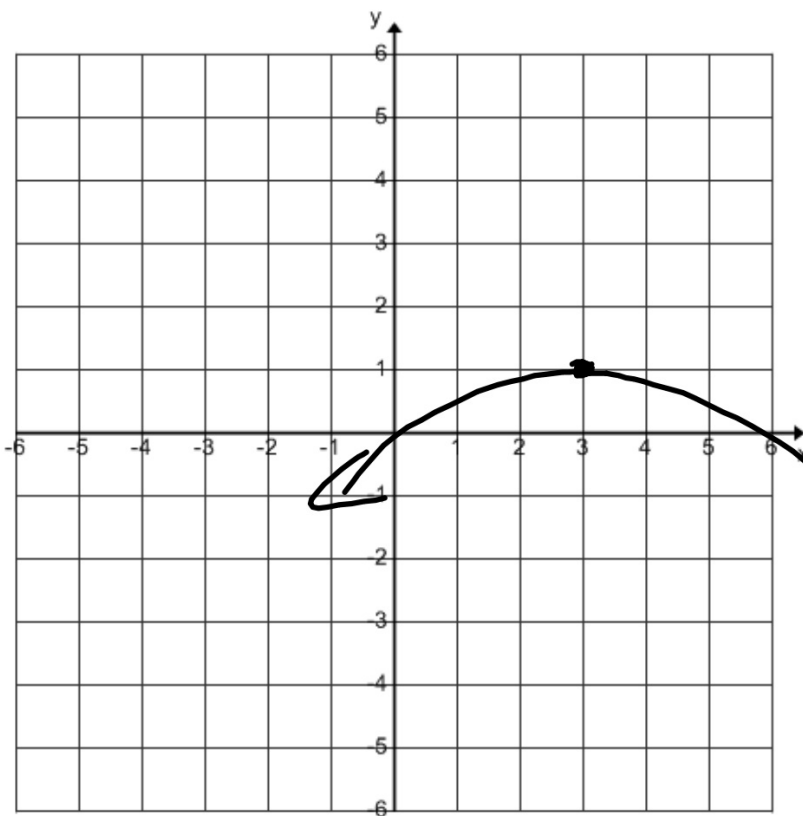
Range

$$2 < y \leq 4$$



$$\begin{array}{l} \lll \\ \hline \text{Domain} \\ x > 1 \end{array}$$

$$\begin{array}{l} \hline \text{Range} \\ y < 5 \end{array}$$

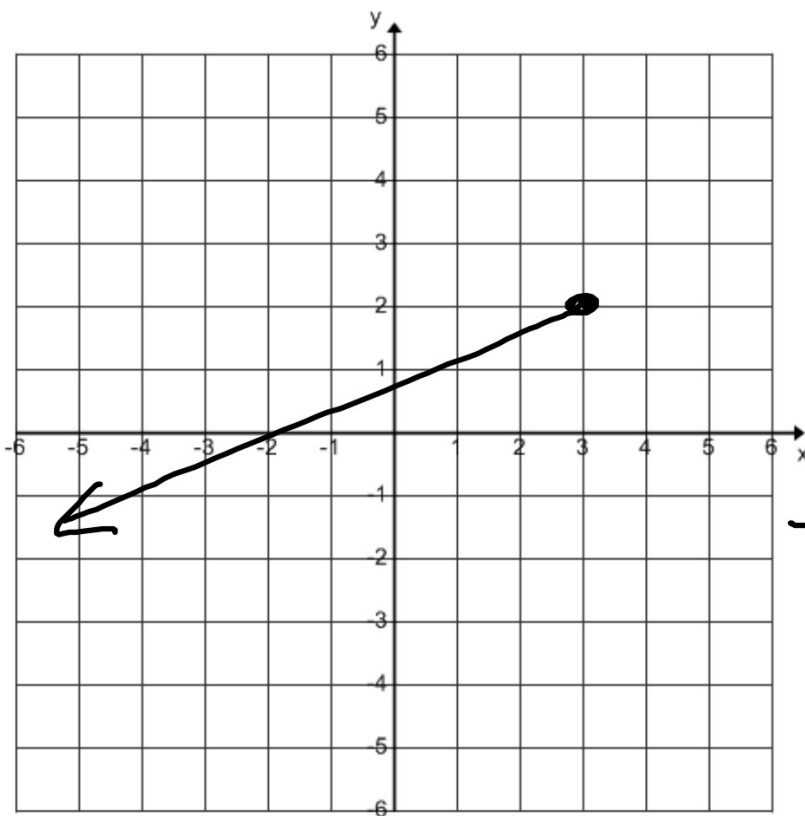


Domain

\mathbb{R}

Range

$y \leq 1$



Domain

$$x \leq 3$$

Range

$$y \leq 2$$