

10-15-19 1<sup>st</sup> Try

① Find the inverse of  $f$

$$f(x) = 2x - 3$$

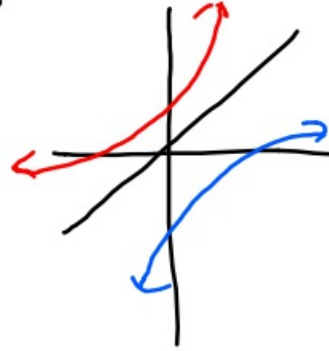
$$y = 2x - 3$$

$$x = 2y - 3$$

Solve  
for  
 $y$

$$\begin{array}{r} +3 \qquad +3 \\ \hline \frac{x+3}{2} = \frac{2y}{2} \end{array}$$

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



② Find  $f^{-1}(x)$  if  $f(x) = x^2 - 2$

$$y = x^2 - 2$$

$$x = y^2 - 2$$

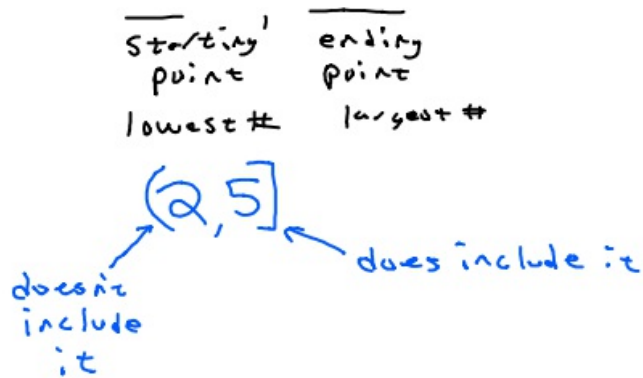
$$\begin{array}{r} +2 \qquad +2 \\ \hline \sqrt{x+2} = \sqrt{y^2} \end{array}$$

$$x^2 = 25$$

$$y = \pm \sqrt{x+2}$$

# Interval notation

①  $2 < x \leq 5$



②  $x \geq 10$

$[10, \infty)$

③  $x \leq 2$

$(-\infty, 2]$

④  $x > 100$        $(100, \infty)$

⑤  $2 \leq x \leq 15$        $[2, 15]$

⑥  $x \leq -8$        $(-\infty, -8]$

$(2, 3)$   $(4, 5)$   $(2, 10)$

10-15-19 4<sup>th</sup> Try

① Find the inverse of

$$f(x) = 3x - 5.$$

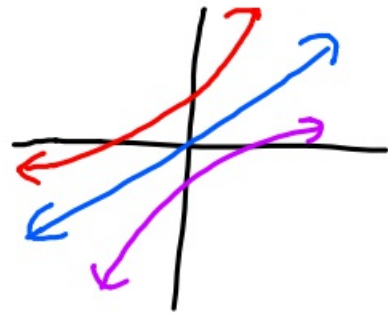
$$y = 3x - 5$$

$$x = 3y - 5$$

$$\frac{x+5}{3} = \frac{3y}{3}$$

$$y = \frac{x+5}{3}$$

$$f^{-1}(x) = \frac{x+5}{3}$$



② Give the inverse of

$$f(x) = x^2 + 5$$

$$y = x^2 + 5$$

$$x = y^2 + 5$$

$$\sqrt{x-5} = \sqrt{y^2}$$

$$y = \pm \sqrt{x-5}$$

$$f^{-1}(x) = \pm \sqrt{x-5}$$

$$x^2 = 25$$

$$x = \pm 5$$

## Interval Notation

①  $2 < x \leq 5$   A horizontal number line with arrows at both ends. A blue circle with a plus sign is at the number 2, and a blue solid dot is at the number 5. A blue line segment connects the two points, with arrows extending from the ends of the line segment.

$(\underline{2}, \underline{5}]$   
↑            ↑  
starts      end  
lowest     highest  
number    number

②  $x \geq 3$



$[3, \infty)$

③  $x < 5$



$(-\infty, 5)$

④  $-4 \leq x < 5$   $[-4, 5)$

⑤  $x \leq 100$   $(-\infty, 100]$

⑥  $x > 25$   $(25, \infty)$