

## Lesson 4-7 → Inverse Functions

Inverse functions switch inputs & outputs

$f(x)$  becomes  $f^{-1}(x)$

How to do:

1. Replace  $f(x)$  with  $y$
2. Switch every  $x$  and  $y$
3. Solve for (the new)  $y$
4. Replace  $y$  with  $f^{-1}(x)$

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

$$y = 5x + 2$$

$$x = 5y + 2$$

$$5y + 2 = x$$

$$\begin{array}{r} -2 \\ -2 \end{array}$$

$$\begin{array}{r} 5y = x - 2 \\ \frac{5}{5} \quad \frac{5}{5} \end{array}$$

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

← put  $y$  on left!

$$f^{-1}(x) = \frac{x-2}{5}$$

The graph of an inverse function is a reflection of the function across the diagonal line  $y=x$

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

$$f^{-1}(x) = \frac{x-2}{5}$$

