

Inverse Functions

DEFINITION

An inverse function is a function that _____ the action of another function

NOTATION: $f^{-1}(x)$

STEPS

1. Rewrite the function using y instead of $f(x)$
2. Switch the x and y variables
3. Solve the new equation for y
4. Place the y with $f^{-1}(x)$

UNDERSTANDING INVERSES

$$f(x) = 3x - 1$$

To solve this function you would _____ your x -value by 3, then _____ 1

To undo your solution you would have to _____ 1, then _____ by 3

EXAMPLES

$$f(x) = -3x + 7$$

$$\text{_____} = -3x + 7$$

$$\text{_____} = -3 \text{_____} + 7$$

$$\text{_____} = -3y$$

$$\text{_____} = y$$

$$f^{-1}(x) = \text{_____}$$

$$f(x) = \frac{x}{4} - 5$$

$$\text{_____} = \frac{x}{4} - 5$$

$$\text{_____} = \frac{\text{_____}}{4} - 5$$

$$\text{_____} = \frac{y}{4}$$

$$\text{_____} = y$$

$$f^{-1}(x) = \text{_____}$$