Inverse of a Function
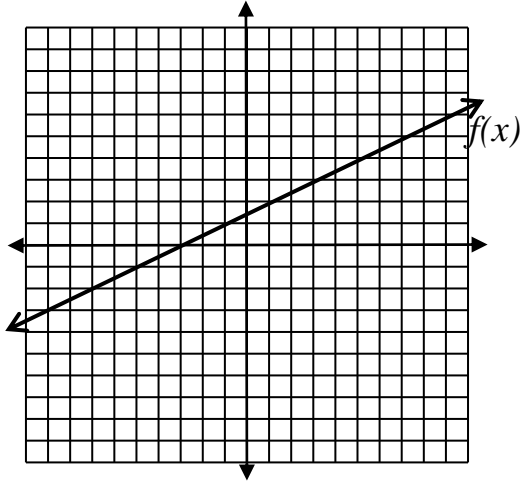
An inverse of a function is the relation formed when _____

_____ If the inverse of a

function is itself a function, it is then called an _____.

Examples:

Given the graph of the function,
graph the inverse.

$f(x)$

If this were represented in a table:

x	f(x)
−1	1
1	2
−3	0
−7	−2
5	4

➡

x	f⁻¹(x)

Find the equation of the inverse
function.

$$f(x) = \frac{1}{2}(x + 5) - 1$$
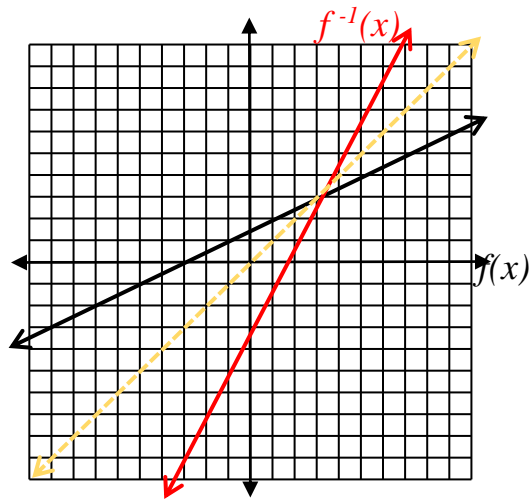
Inverse of a Function

An inverse of a function is the relation formed when <u>the independent variable is</u>
<u>exchanged with the dependent variable.</u> If the inverse

of a function is itself a function, it is then called an <u>INVERSE FUNCTION</u>.

Examples:

Given the graph of the function,
graph the inverse.

- Reflection over the line $y = x$
- $(x, y) \rightarrow (y, x)$

If this were represented in a table:

x	f(x)
−1	1
1	2
−3	0
−7	−2
5	4

➡️

x	f⁻¹(x)
1	−1
2	1
0	−3
−2	−7
4	5

Find the equation of the inverse
function.

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

Inverse:

$$x = \frac{1}{2}(y + 5) - 1$$
$$+1 \qquad\qquad +1$$
$$x + 1 = \frac{1}{2}(y + 5)$$

$$2(x + 1) = y + 5$$
$$\qquad -5 \qquad -5$$
$$2(x + 1) - 5 = y$$

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