

A **relation** is pairing of **input values** with corresponding **output values**

Domain of relation	Input - Domain	-5	-3	1	4	6	Relation 1
Range of relation	Output - Range	-4	-1	0	2	5	

The **inverse** of **Relation 1** switches the **domain** and **range** and pairs the **output values** of **Relation 1** back to corresponding **input values** of **Relation 1**.

Domain of inverse	Input - Domain	-4	-1	0	2	5	Inverse of Relation 1
Range of inverse	Output - Range	-5	-3	1	4	6	

A **relation** is pairing of **input values** with corresponding **output values**

Domain of relation	Input - Domain	-5	-3	1	4	6	Relation 1
Range of relation	Output - Range	-4	-1	0	2	5	

The **inverse** of a **relation** with ordered pairs (x,y) ,
is the set of all ordered pairs (y,x) .

Domain of inverse	Input - Domain	-4	-1	0	2	5	Inverse of Relation 1
Range of inverse	Output - Range	-5	-3	1	4	6	

Given the following relation, graph the relation, determine the inverse of the relation, and graph the inverse.

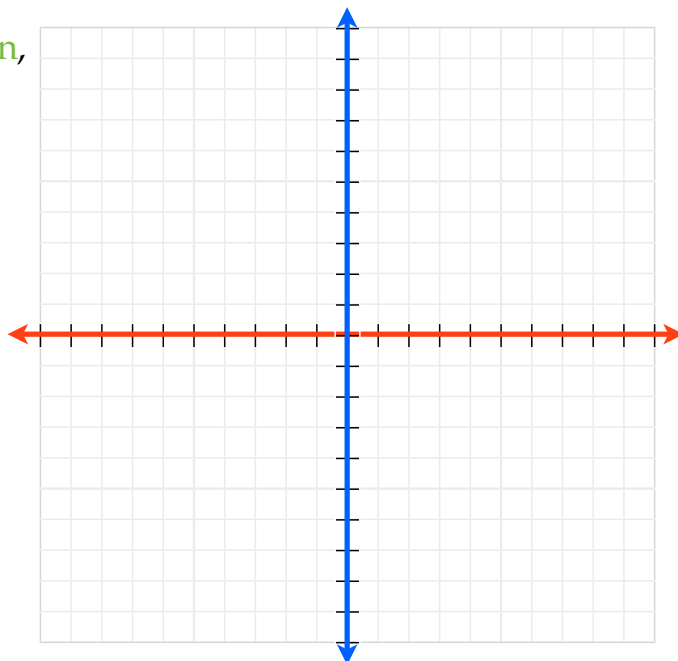
Relation

$(-4, 6)$

$(-8, 4)$

$(0, -6)$

$(2, 6)$



Given a relation is also a function, $f(x)$

The inverse of a function, $f^{-1}(x)$, is created by switching the domain values (x) with the range values (y).

function, $f(x)$

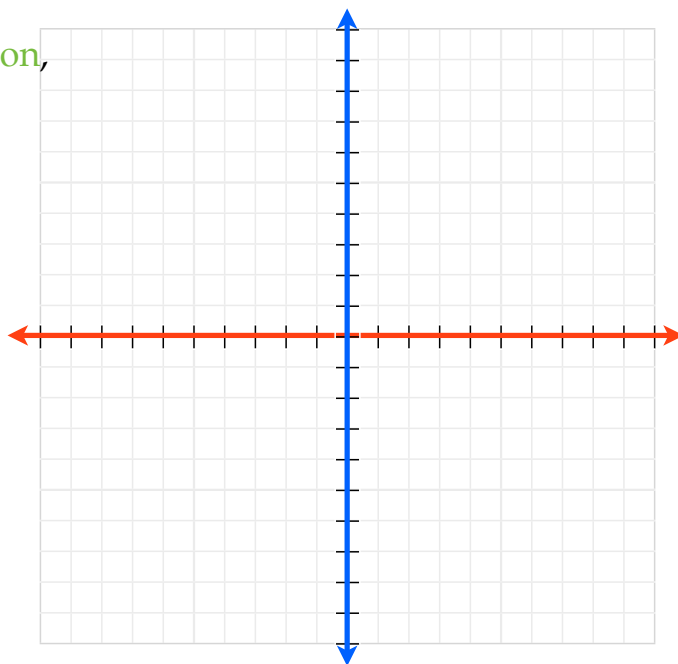
inverse, $f^{-1}(x)$

$$f(x) = 2x + 4$$

Given the following function, graph the function, determine its inverse, and graph the inverse.

function, $f(x)$

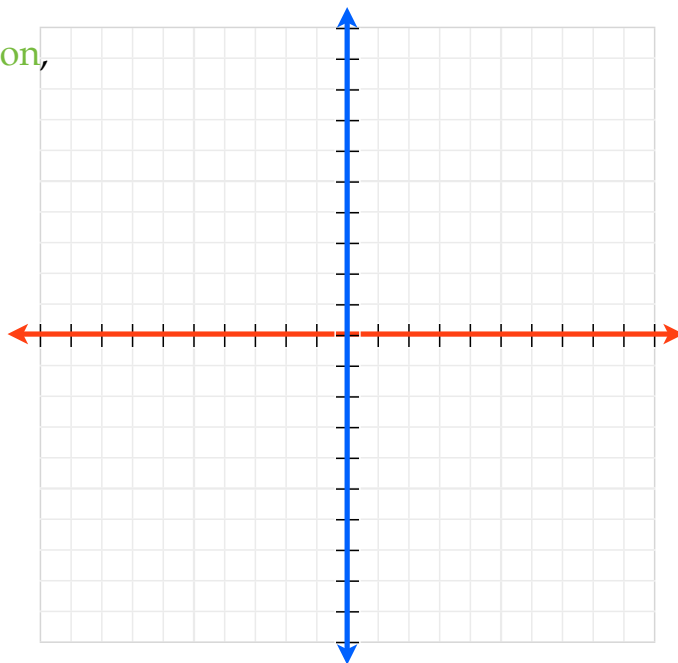
$$f(x) = x + 3$$



Given the following function, graph the function, determine its inverse, and graph the inverse.

function, $f(x)$

$$f(x) = 4x - 8$$



Given $f(x)$ and $g(x)$ are inverses of one another...

then $f(g(x)) = x$ and $g(f(x)) = x$

Given $f(x) = x + 3$ and $g(x) = x - 3$, show that $f(x)$ and $g(x)$ are inverses of one another

find $f(g(x))$

find $g(f(x))$

Given $f(x)$ and $g(x)$ are inverses of one another...

then $f(g(x)) = x$ and $g(f(x)) = x$

Given $f(x) = 4x - 8$ and $g(x) = \frac{1}{4}x + 2$, show that $f(x)$ and $g(x)$ are inverses of one another

find $f(g(x))$

find $g(f(x))$