4.7 Inverse Functions & Relations- Day 1 Notes

Objective: Find and graph the inverse of a function or relation

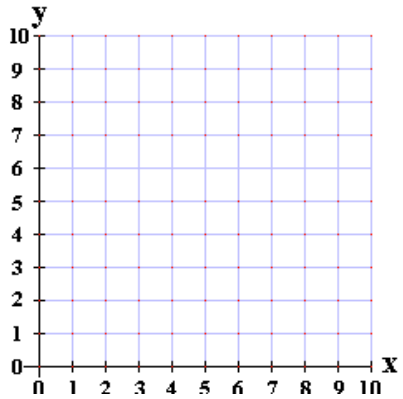
An inverse relation is the set of ordered pairs obtained by _____

_____. If the inverse of *f(x)* is a function , we use inverse function notation: $f^{-1}(x)$.

Graph the relation and connect the points. Then graph the inverse. Identify the domain & range of each relation.

Relation:

x	0	1	5	8
y	2	5	6	9



Domain:
Range:

Inverse:

x				
y				

Domain:
Range:

Property of Inverses: Two functions are inverses if they 'undo' one another.
Inverse functions have their points reflected across the line *y=x.*

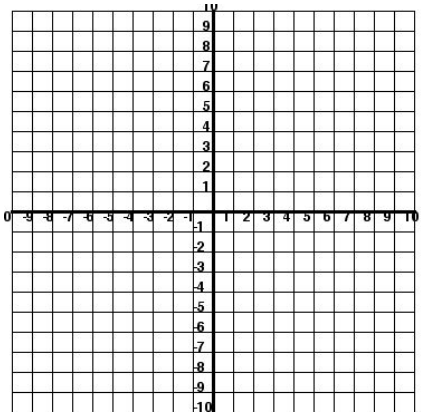
<u>To find inverses of functions:</u>
step 1: rewrite using x & y
step 2: switch the x & y
step 3: solve for y

Write the inverse of the function. Graph both the function & its inverse (label each.)

Ex: $f(x) = 2x - 8$ $f^{-1}(x) =$

x	y

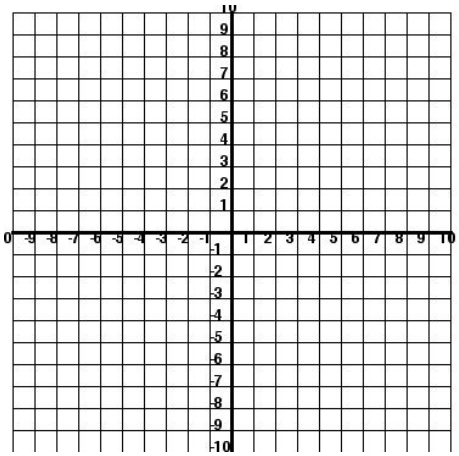
x	y



1. $f(x) = -3x + 6$ $\quad f^{-1}(x) =$

x	y

x	y

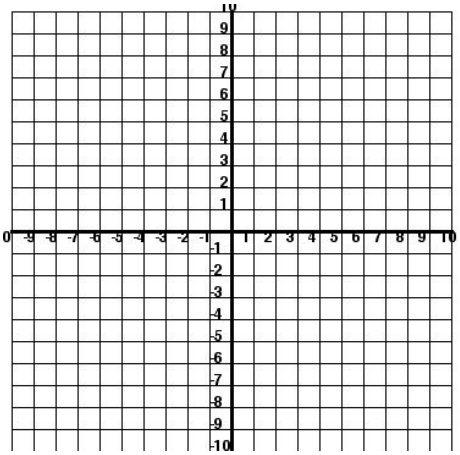


Write and graph the inverse of each function.

Ex. $f(x) = 3(x - 4)$ $\quad f^{-1}(x) =$

x	y

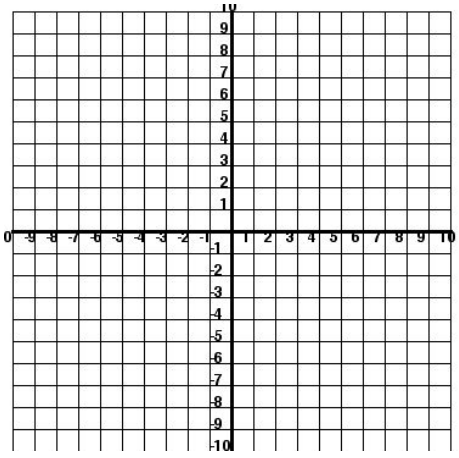
x	y



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

x	y

x	y



Write the inverse of each function.

Ex. $f(x) = -\frac{5}{3}x + 5$

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