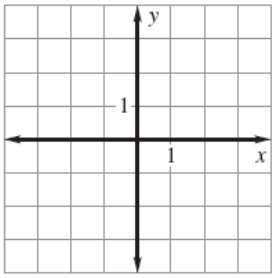
Algebra II **Name** _____

Worksheet –Inverses of Functions/ More Domain & Range

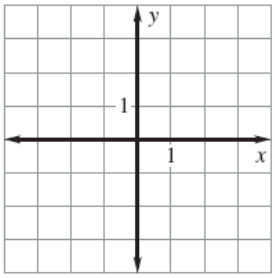
State the inverse of each relation

1. Given the **ordered pairs**: $\{(3,-2)\ (-1,\ 5)\ (4,\ 0)\}$



the inverse points are: _____

Graph the inverse.



Is this an example of an inverse function? _____

2. Given the **table:**

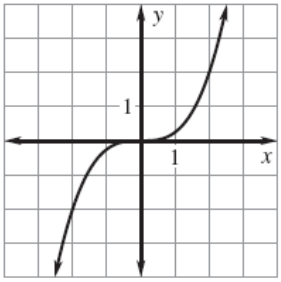
x	0	1	2	3	4
y	3	1	2	4	2

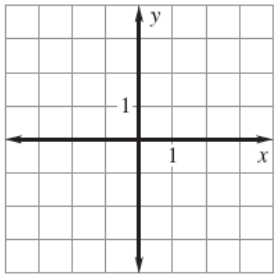
the inverse is:

x					
y					

Is this an example of an inverse function? _____

3. Given the **graph:** the inverse is:





(it may help to list the ordered pairs….)

Is this an example of an inverse function? _____

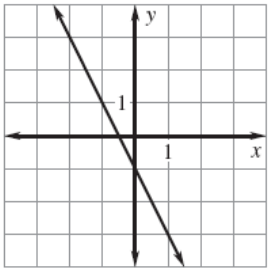
Verify that f and g are inverse functions. Find $f(g(x))$ **and** $g(f(x))$**.**

4. $f(x) = x + 2; g(x) = x - 2$

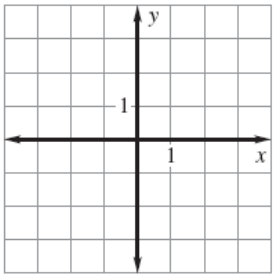
5. $f(x) = 4x - 1; g(x) = \frac{1}{4}x + \frac{1}{4}$

Given the following graph, determine if it is a function using the vertical line test, if the inverse is a function using the horizontal line test, and then graph the inverse by choosing points from the graph and flipping the x and y.

6.



Function: _____

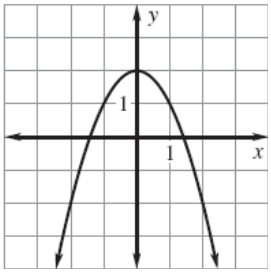


Function: _____

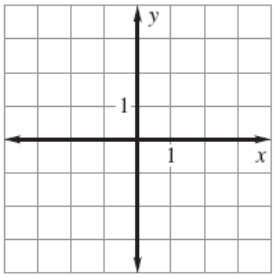
Original ordered pairs: _____

Inverse ordered pairs: _____

7.



Function: _____



Function: _____

Original ordered pairs: _____

Inverse ordered pairs: _____

8. How does the graph of the original function compare to the graph of the inverse?

It is a reflection over the line _____ *(fill in the equation of the line)*

Given the equation of the function, write the equation of the inverse, $g(x)$***.***

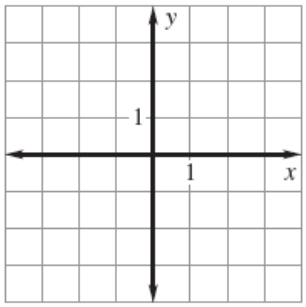
9. $f(x) = 3x - 1$	10. $f(x) = \frac{1}{2}x + 4$
11. $f(x) = \frac{x-2}{3}$	12. $f(x) = x^2;\ x \geq 0$
13. $f(x) = x^3 + 3$	14. $f(x) = 2x^2 - 1;\ x \geq 0$

Find the inverse of each function and then graph the equation and its inverse on the same coordinate plane.

15. $f(x) = x + 2$

$g(x) =$ _____

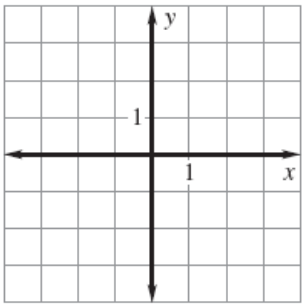
Graph of $f(x)$ *and* $g(x)$ *(label each)*



16. $f(x) = 2x + 1$

$g(x) =$ _____

Graph of $f(x)$ *and* $g(x)$ *(label each)*

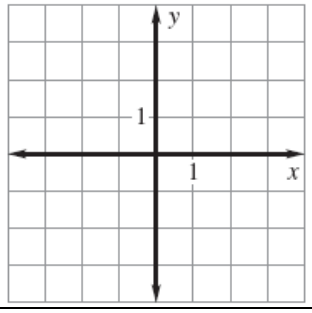


17. $f(x) = x^2 - 1;\ x \geq 0$

x	y

$g(x) =$ _____

Graph of $f(x)$ *and* $g(x)$ *(label each)*



Review composite functions: If $f(x) = x^2$ *and* $g(x) = 3x - 2$, find

18. $g(f(5))$

19. $f(g(5))$

20. $g(f(2))$