

6.1 – 6.3 TEST REVIEW

Learning Target 6A

Given: $f(x) = x^2 + 4x - 5$ **and** $g(x) = x^2 - 1$; perform each operation and indicate any domain restrictions.

1. $(f+g)(x) =$

2. $(f-g)(x) =$

3. $(f * g)(x) =$

4. $\left(\frac{f}{g}\right)(x) =$

Given: $f(x) = 4x + 3$; $g(x) = 3x - 1$; **and** $h(x) = x^2 + 3x + 2$

5. $f(g(-3)) =$

6. $h(g(4)) =$

7. $f(h(-1)) =$

Find $f(g(x))$ and $g(f(x))$. Note any domain restrictions if they exist.

8. $f(x) = 2x^2 - 7$ and $g(x) = 5x + 3$

Find $f(g(x))$ and $g(f(x))$. Note any domain restrictions if they exist.

9. $f(x) = -5x^2 - 3$ and $g(x) = x + 2$

Learning Target 6B

Write the inverse for each of the following functions. Remember to use inverse function notation if the inverse is a function!

10. $f(x) = 4x - 9$

11. $g(x) = -\frac{2}{5}x - 3$

Use composition to determine if the given functions are inverses of one another.

12. $f(x) = x^2 - 1$
 $g(x) = \sqrt{x + 1}$

13. $f(x) = 5x + 3$
 $g(x) = \frac{1}{5}x + 15$

Identify domain and range for the relation and its inverse.

14. relation

X	-8	-2	4
Y	2	4	6

Domain:

Range:

Inverse:

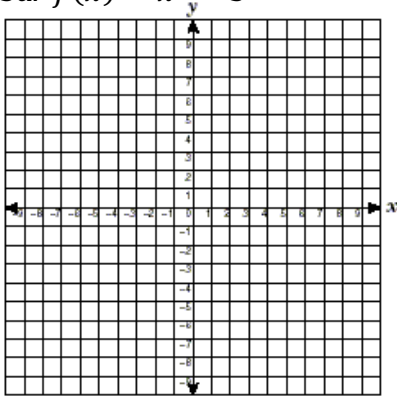
X			
Y			

Domain:

Range:

Write the inverse for each of the following functions. Restrict the domain of the original function so that the inverse is a function. Remember to use inverse function notation if the inverse is a function!

15a. $f(x) = x^2 - 3$



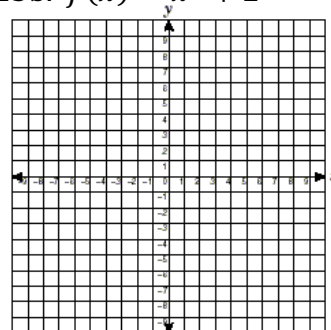
Domain Restriction:

Inverse Function:

Domain Restriction:

Inverse Function:

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



Domain Restriction:

Inverse Function:

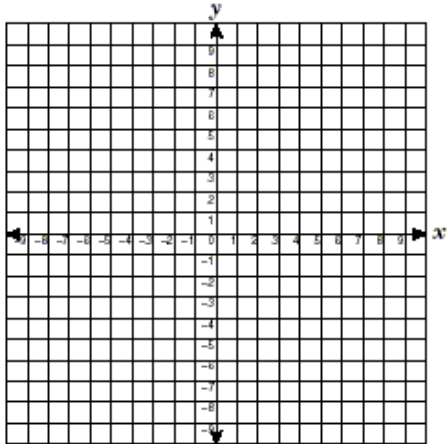
Domain Restriction:

Inverse Function:

Learning Target 6C

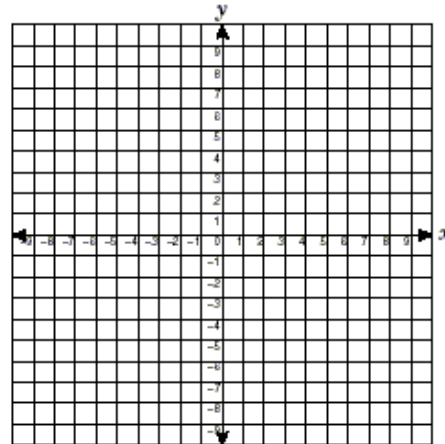
Graph each function. State the domain and range and the Min/Max point. Also, identify the transformations.

16. $f(x) = \sqrt{x-1}$



Domain:
Range:
Max/Min Point:
Transformations:

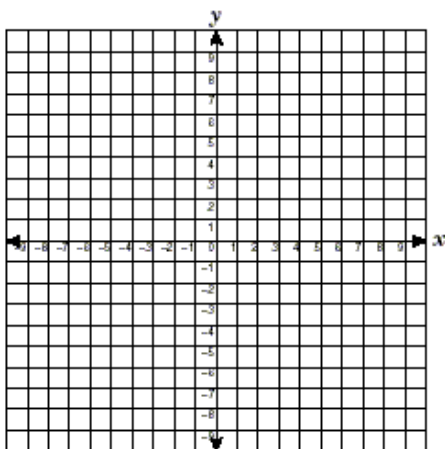
17. $g(x) = -3\sqrt{x+2} + 4$



Domain:
Range:
Max/Min Point:
Transformations:

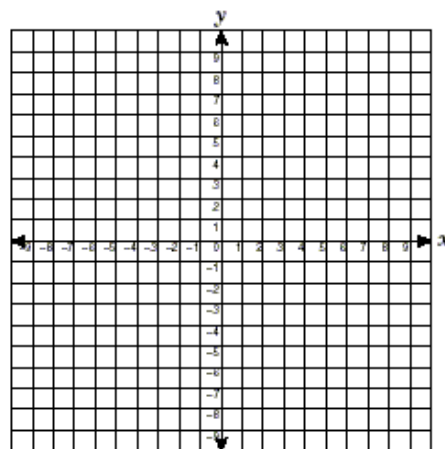
Graph each inequality. And identify the transformations.

18. $g(x) > \sqrt{x+1}$



Transformations:

19. $f(x) \geq -\sqrt{x-2} + 3$



Transformations: