

6.1 – 6.3 QUIZ REVIEW

6.1 Operations with Functions

Given: $f(x) = x^2 - 6x - 16$ **and** $g(x) = x - 8$; perform each operation and indicate any domain restrictions.

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

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

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

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

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

5. $f(x) = 2x - 1$ and $g(x) = 8x^2 + 3$

6. $f(x) = -3x$ and $g(x) = -x + 8$

Given: $f(x) = -2x + 2$; $g(x) = 5x$; **and** $h(x) = x^2 + 6x + 8$

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

8. $h(g(2)) =$

9. $f(h(-3)) =$

6.2 Inverse Functions & relations

Graph and connect the set of points and their inverse. Identify domain and range.

10. relation

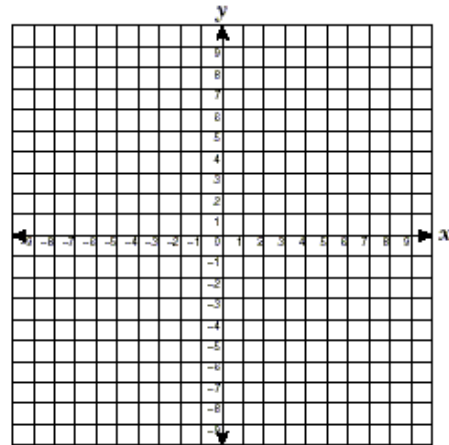
x	-2	-1	5
y	1	2	4

Domain:

Range:

Inverse:

x			
y			



Domain:

Range:

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

11. $f(x) = 3x - 12$

12. $g(x) = -\frac{3}{4}x + 6$

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

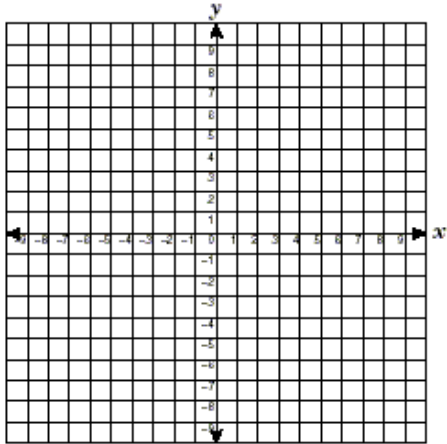
13. $f(x) = (x + 6)^2$
 $g(x) = \sqrt{x} - 6$

14. $f(x) = \frac{1}{4}x - 4$
 $g(x) = 4x + 8$

6.3 Square Root Functions & Inequalities

Graph each function. Identify domain and range for each equation.

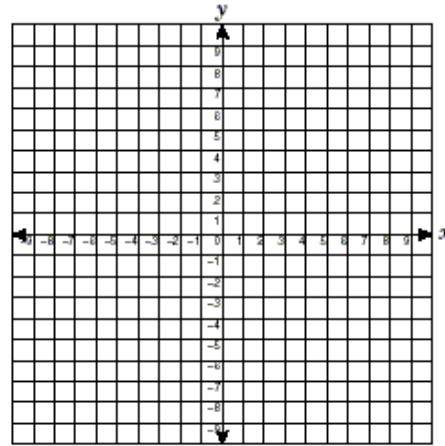
15. $f(x) = \sqrt{x+4}$



Domain:

Range:

16. $g(x) = 2\sqrt{x-3} + 5$

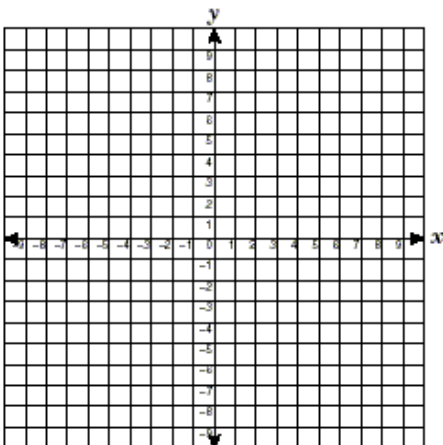


Domain:

Range:

Graph each inequality.

17. $g(x) < -\sqrt{x+5} + 2$



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

