

Unit 2B Study Guide

Perform the following operations on functions and give the domain.

$$f(x) = x^2$$

$$g(x) = 2x - 7$$

$$h(x) = -3x^2 + 4$$

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

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

3) $g(x) \cdot f(x)$

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

5) $f(g(x))$

6) $g(f(x))$

7) $f(g(2))$

8) $h(h(-4))$

9) $f(g(h(3)))$

Find the inverse of the $f(x)$.

10) $f(x) = x^2 - 4$

11) $f(x) = (x - 2)^2 + 3$

12) $f(x) = x^3 - 4$

13) $f(x) = \frac{\sqrt{x-2}}{4} + 5$

14) $f(x) = \sqrt{x-3} + 4$

15) $f(x) = (4x - 2)^2$

Determine if the following functions are inverses of each other using $f(g(x))$ and $g(f(x))$.

16. $f(x) = \frac{2}{3}x - 12$ and $g(x) = \frac{3}{2}x + 18$

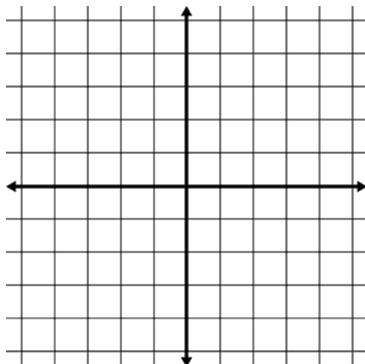
17. $f(x) = x^2 - 4$ and $g(x) = \pm\sqrt{x+4}$

Find the inverse then graph the function and its inverse and tell if the function is one-to-one.

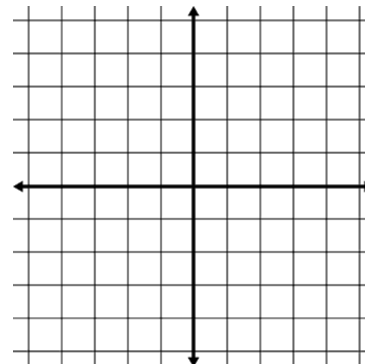
18. $f(x) = -3x - 2$

inverse:

x	y
-2	
-1	
0	
1	
2	



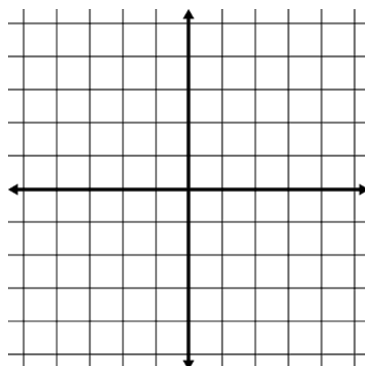
x	y



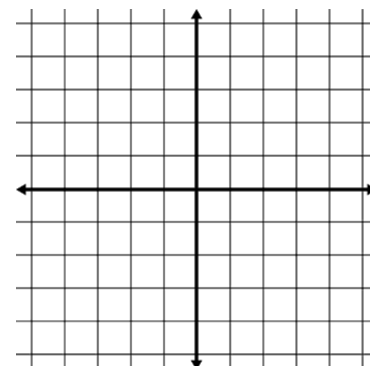
19. $f(x) = -x^2 + 3$

inverse:

x	y
-2	
-1	
0	
1	
2	

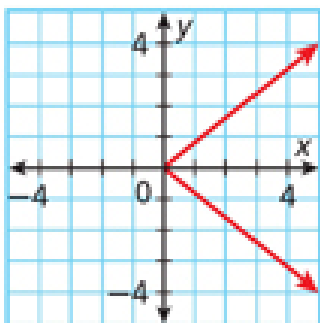


x	y



State whether the function is one-to-one.

20.



21.

