

F-BF.B: Skills Practice Problems

5.3 #1-6

Rewrite each function $g(x)$ in terms of the basic function $f(x)$.

1. $f(x) = x$
 $g(x) = x + 4$
 $g(x) = f(x) + 4$

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

3. $f(x) = x$
 $g(x) = x - 8$

4. $f(x) = 3^x$
 $g(x) = 3^x + 1$

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

6. $f(x) = 4^x$
 $g(x) = 4^x - 6$

5.3 #13-18

Rewrite each function $g(x)$ in terms of the basic function $f(x)$.

13. $f(x) = 3^x$
 $g(x) = 3^{(x+1)}$
 $g(x) = 3^{(x+1)} = f(x + 1)$

14. $f(x) = 3^x$
 $g(x) = 3^{(x+5)}$

15. $f(x) = 2^x$
 $g(x) = 2^{(x-1)}$

16. $f(x) = 2^x$
 $g(x) = 2^{(x-9)}$

17. $f(x) = 2x$
 $g(x) = 2(x - 3)$

18. $f(x) = 2x$
 $g(x) = 2(x + 4)$

5.3 #39-44

Write the equation of the function given each translation.

39. $f(x) = x$
Vertical translation up 2 units
 $g(x) = x + 2$

40. $f(x) = x$
Vertical translation down 5 units

41. $f(x) = 3^x$
Horizontal translation right 4 units

42. $f(x) = 2^x$
Horizontal translation left 6 units

43. $f(x) = 3^x$
Vertical translation down 5 units

44. $f(x) = 4x$
Horizontal translation right 3 units

5.4 #1-6

Rewrite each function $g(x)$ in terms of the basic function $f(x)$.

1. $f(x) = 3^x$
 $g(x) = -(3^x)$
 $g(x) = -f(x)$

2. $f(x) = 3^x$
 $g(x) = 3^{-x}$

3. $f(x) = 4^x$
 $g(x) = -(4^x)$

4. $f(x) = 4^x$
 $g(x) = 4^{-x}$

5. $f(x) = 2^x + 4$
 $g(x) = 2^{-x} + 4$

6. $f(x) = 2^x - 1$
 $g(x) = -(2^x - 1)$

5.4 #19-24

Write a function, $g(x)$, to describe each reflection of $f(x)$.

19. $f(x) = 3^x$
Reflection about the horizontal line $y = 0$.
 $g(x) = -3^x$

20. $f(x) = 4^x$
Reflection about the vertical line $x = 0$.

21. $f(x) = -12x$
Reflection about the vertical line $x = 0$.

22. $f(x) = 7x$
Reflection about the horizontal line $y = 0$.

23. $f(x) = 2^x + 9$
Reflection about the horizontal line $y = 0$.

24. $f(x) = -8^x + 1$
Reflection about the vertical line $x = 0$.