

Assignment 8: Function Operations, and Inverse Functions

Evaluate each function.

1) $f(a) = 3a - 1$; Find $f(-4)$

2) $f(x) = -x^3 + 3x^2$; Find $f(4)$

3) $f(t) = 4t - 1$; Find $f(1)$

Perform the indicated operation.

4) $h(n) = 2n - 5$
 $g(n) = 3n + 4$
Find $h(n) \cdot g(n)$

5) $h(t) = 2t - 3$
 $g(t) = t^2 - 3t$
Find $h(t) \div g(t)$

6) $f(n) = 4n + 5$
 $g(n) = n^3 - n$
Find $f(n) \cdot g(n)$

7) $g(x) = x^2 + 3x$
 $h(x) = 3x$
Find $(g + h)(-6)$

8) $h(n) = -3n + 1$
 $g(n) = n - 5$
Find $\left(\frac{h}{g}\right)(-10)$

9) $f(n) = n^2 + n$
 $g(n) = 3n - 3$
Find $\left(\frac{f}{g}\right)(6)$

10) $g(t) = t - 1$
 $h(t) = 2t^2 + t$
Find $(g + h)(4)$

11) $f(a) = -a - 2$
 $g(a) = -3a^2 + 1$
Find $(f \circ g)(8)$

Find the inverse of each function.

12) $g(x) = \frac{x}{3}$

13) $h(x) = -3x - 9$

14) $f(n) = n + 2$

15) $g(n) = \frac{3}{2}n - \frac{3}{2}$

Assignment 8: Function Operations, and Inverse Functions

Evaluate each function.

1) $f(a) = 3a - 1$; Find $f(-4)$
 -13

2) $f(x) = -x^3 + 3x^2$; Find $f(4)$
 -16

3) $f(t) = 4t - 1$; Find $f(1)$
 3

Perform the indicated operation.

4) $h(n) = 2n - 5$
 $g(n) = 3n + 4$
 Find $h(n) \cdot g(n)$
 $6n^2 - 7n - 20$

5) $h(t) = 2t - 3$ $\frac{2t-3}{t^2-3t}$
 $g(t) = t^2 - 3t$
 Find $h(t) \div g(t)$

6) $f(n) = 4n + 5$
 $g(n) = n^3 - n$
 Find $f(n) \cdot g(n)$
 $4n^4 + 5n^3 - 4n^2 - 5n$

7) $g(x) = x^2 + 3x$
 $h(x) = 3x$
 Find $(g + h)(-6)$
 0

8) $h(n) = -3n + 1$ $-\frac{31}{15}$
 $g(n) = n - 5$
 Find $\left(\frac{h}{g}\right)(-10)$

9) $f(n) = n^2 + n$ $\frac{14}{5}$
 $g(n) = 3n - 3$
 Find $\left(\frac{f}{g}\right)(6)$

10) $g(t) = t - 1$
 $h(t) = 2t^2 + t$
 Find $(g + h)(4)$
 39

11) $f(a) = -a - 2$
 $g(a) = -3a^2 + 1$
 Find $(f \circ g)(8)$
 189

Find the inverse of each function.

12) $g(x) = \frac{x}{3}$
 $g^{-1}(x) = 3x$

13) $h(x) = -3x - 9$
 $h^{-1}(x) = \frac{-9-x}{3}$

14) $f(n) = n + 2$
 $f^{-1}(n) = n - 2$

15) $g(n) = \frac{3}{2}n - \frac{3}{2}$
 $g^{-1}(n) = 1 + \frac{2}{3}n$