

## 10.3 Function Composition

Date \_\_\_\_\_ Period \_\_\_\_\_

**Perform the indicated operation.**

1)  $g(x) = 3x - 1$   
 $f(x) = 4x + 1$   
Find  $g(f(4))$

2)  $f(x) = 4x$   
 $g(x) = x^2 - 5x$   
Find  $f(g(1))$

3)  $g(n) = n - 5$   
 $h(n) = -4n + 5$   
Find  $g(h(1))$

4)  $f(x) = 3x - 1$   
 $g(x) = 2x + 4$   
Find  $f(g(3))$

5)  $h(n) = n - 3$   
 $g(n) = 2n + 1$   
Find  $h(g(7))$

6)  $g(t) = 3t + 5$   
 $f(t) = 3t^2 + 3t$   
Find  $g(f(-5))$

7)  $g(t) = -2t - 2$   
Find  $(g \circ g)(-4)$

8)  $f(x) = 4x + 5$   
 $g(x) = x^2 - 2x$   
Find  $(f \circ g)(0)$

9)  $g(n) = 2n$   
 $h(n) = n^3 + 3n$   
Find  $(g \circ h)(-1)$

10)  $f(n) = n + 5$   
 $g(n) = -3n^2 + 3n$   
Find  $(f \circ g)(2)$

11)  $g(t) = t + 3$   
 $f(t) = t + 1$   
Find  $g(f(t))$

12)  $h(x) = 3x + 1$   
 $g(x) = 4x + 4$   
Find  $h(g(x))$

13)  $f(n) = 4n + 5$   
 $g(n) = n^3 + 2$   
Find  $f(g(n))$

14)  $g(x) = x + 4$   
 $h(x) = 3x + 3$   
Find  $g(h(x))$

15)  $g(a) = a^2 - 3$   
 $h(a) = a + 1$   
Find  $(g \circ h)(a)$

16)  $f(t) = 4t - 5$   
Find  $(f \circ f)(t)$

17)  $f(x) = x^2 - 5x$   
 $g(x) = x - 3$   
Find  $(f \circ g)(x)$

18)  $g(a) = a + 2$   
Find  $(g \circ g)(a)$

## Answers to 10.3 Function Composition (ID: 1)

1) 50

5) 12

9) -8

13)  $4n^3 + 13$

17)  $x^2 - 11x + 24$

2) -16

6) 185

10) -1

14)  $3x + 7$

18)  $a + 4$

3) -4

7) -14

11)  $t + 4$

15)  $a^2 + 2a - 2$

4) 29

8) 5

12)  $12x + 13$

16)  $16t - 25$