

## 2.5 Composition of Functions

Date \_\_\_\_\_

**Perform the indicated operation.**

$$1) \begin{aligned} g(a) &= a^2 + 2 - a \\ h(a) &= -3a + 3 \\ \text{Find } (g \circ h)(-1) \end{aligned}$$

$$2) \begin{aligned} g(x) &= 2x - 3 \\ \text{Find } (g \circ g)(7) \end{aligned}$$

$$3) \begin{aligned} g(x) &= 3x + 1 \\ \text{Find } (g \circ g)(9) \end{aligned}$$

$$4) \begin{aligned} g(a) &= a - 1 \\ h(a) &= a^2 + 5 \\ \text{Find } (g \circ h)(-8) \end{aligned}$$

$$5) \begin{aligned} h(n) &= n + 2 \\ g(n) &= -3n - 4 \\ \text{Find } (h \circ g)(-5) \end{aligned}$$

$$6) \begin{aligned} f(x) &= 3x - 2 \\ g(x) &= -3x^3 - 5 \\ \text{Find } (f \circ g)(-2) \end{aligned}$$

$$7) \begin{aligned} g(x) &= x^2 - 4x \\ f(x) &= -3x - 3 \\ \text{Find } (g \circ f)(3) \end{aligned}$$

$$8) \begin{aligned} h(t) &= 3t + 2 \\ g(t) &= -4t + 4 \\ \text{Find } (h \circ g)(7) \end{aligned}$$

$$9) \begin{aligned} f(t) &= t^3 + 5t \\ g(t) &= -t \\ \text{Find } (f \circ g)(t) \end{aligned}$$

$$10) \begin{aligned} g(t) &= 3t^2 - 4 \\ f(t) &= 4t - 1 \\ \text{Find } (g \circ f)(t) \end{aligned}$$

$$11) \begin{aligned} g(n) &= 4n + 3 \\ h(n) &= n - 2 \\ \text{Find } (g \circ h)(n) \end{aligned}$$

$$12) \begin{aligned} f(x) &= 3x + 3 \\ g(x) &= -3x - 4 \\ \text{Find } (f \circ g)(x) \end{aligned}$$

13)  $f(n) = 2n$   
 $g(n) = n^2 + 1$   
Find  $(f \circ g)(n)$

14)  $g(t) = t + 5$   
 $f(t) = t^3 - 3t^2$   
Find  $(g \circ f)(t)$

15)  $h(a) = a^2 - 2$   
 $g(a) = 3a - 5$   
Find  $(h \circ g)(a)$

16)  $h(n) = -3n + 5$   
 $g(n) = 3n - 5$   
Find  $(h \circ g)(n)$

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

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

19)  $g(x) = x - 4$   
 $h(x) = x - 3$   
Find  $(g \circ h)(x)$

20)  $h(n) = 3n - 3$   
 $g(n) = -2n^2 - 5$   
Find  $(h \circ g)(n)$

21)  $g(x) = 3x - 3$   
 $f(x) = -4x - 2$   
Find  $(g \circ f)(x)$

22)  $g(n) = 4n + 5$   
 $f(n) = n^2 + 2$   
Find  $(g \circ f)(n)$

23)  $g(x) = 2x - 5$   
 $f(x) = -3x - 4$   
Find  $(g \circ f)(x)$

24)  $g(x) = x - 2$   
 $f(x) = x^3 - 4$   
Find  $(g \circ f)(x)$

## Answers to 2.5 Composition of Functions

1) 32

5) 13

9)  $-t^3 - 5t$

13)  $2n^2 + 2$

17)  $6t^2 - 18$

21)  $-12x - 9$

2) 19

6) 55

10)  $48t^2 - 24t - 1$

14)  $t^3 - 3t^2 + 5$

18)  $2n^2 + 2n - 3$

22)  $4n^2 + 13$

3) 85

7) 192

11)  $4n - 5$

15)  $9a^2 - 30a + 23$

19)  $x - 7$

23)  $-6x - 13$

4) 68

8)  $-70$

12)  $-9x - 9$

16)  $-9n + 20$

20)  $-6n^2 - 18$

24)  $x^3 - 6$