

Function Operations & Compositions

Date _____ Period _____

Perform the indicated operation.

1) $g(x) = x^3 + x$
 $h(x) = x + 5$
 Find $g(x) + h(x)$

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

3) $h(x) = 3x + 1$
 $g(x) = x^3 - 2$
 Find $h(x) - g(x)$

4) $g(x) = 4x - 4$
 $h(x) = -x^2 - 4x$
 Find $g(x) - h(x)$

5) $g(x) = 3x + 3$
 $h(x) = x^3 + 3$
 Find $g(x) \cdot h(x)$

6) $g(x) = -4x + 4$
 $h(x) = x^3 + 4x^2$
 Find $g(x) \cdot h(x)$

7) $g(t) = t^2 + 3t$
 $f(t) = 3t - 4$
 Find $g(t) \cdot f(t)$

8) $f(x) = 3x - 4$
 $g(x) = 3x - 2$
 Find $f(x) \cdot g(x)$

Perform the composition.

9) $g(x) = x - 2$
 $h(x) = -x + 1$
 Find $g(h(x))$

10) $f(a) = 2a + 4$
 Find $f(f(a))$

11) $g(t) = 4t - 3$
 $f(t) = t^2 - t$
 Find $g(f(t))$

12) $g(x) = x + 2$
 $h(x) = -4x + 3$
 Find $g(h(x))$

13) $g(x) = 4x + 5$
 $h(x) = x^2 + 1$
 Find $g(h(x))$

14) $g(n) = 4n + 2$
 $h(n) = -n + 3$
 Find $g(h(n))$

Perform the composition & evaluate for the given number.

15) $g(x) = 2x + 4$
 $f(x) = 4x + 3$
 Find $g(f(-5))$

16) $g(n) = n^2 - 5n$
 $f(n) = -4n + 2$
 Find $g(f(2))$

17) $f(n) = 2n - 4$
 $g(n) = 4n + 4$
 Find $f(3) + g(3)$

18) $f(x) = 2x - 5$
 $g(x) = x^2 - 5$
 Find $f(2) \cdot g(2)$

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

20) $h(a) = a - 1$
 $g(a) = -4a - 5$
 Find $h(-10) + g(-10)$

Function Operations & Compositions

Date _____ Period _____

Perform the indicated operation.

$$1) \begin{aligned} g(x) &= x^3 + x \\ h(x) &= x + 5 \\ \text{Find } g(x) + h(x) \\ & x^3 + 2x + 5 \end{aligned}$$

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

$$5) \begin{aligned} g(x) &= 3x + 3 \\ h(x) &= x^3 + 3 \\ \text{Find } g(x) \cdot h(x) \\ & 3x^4 + 3x^3 + 9x + 9 \end{aligned}$$

$$7) \begin{aligned} g(t) &= t^2 + 3t \\ f(t) &= 3t - 4 \\ \text{Find } g(t) \cdot f(t) \\ & 3t^3 + 5t^2 - 12t \end{aligned}$$

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

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

$$6) \begin{aligned} g(x) &= -4x + 4 \\ h(x) &= x^3 + 4x^2 \\ \text{Find } g(x) \cdot h(x) \\ & -4x^4 - 12x^3 + 16x^2 \end{aligned}$$

$$8) \begin{aligned} f(x) &= 3x - 4 \\ g(x) &= 3x - 2 \\ \text{Find } f(x) \cdot g(x) \\ & 9x^2 - 18x + 8 \end{aligned}$$

Perform the composition.

$$9) \begin{aligned} g(x) &= x - 2 \\ h(x) &= -x + 1 \\ \text{Find } g(h(x)) \\ & -x - 1 \end{aligned}$$

$$11) \begin{aligned} g(t) &= 4t - 3 \\ f(t) &= t^2 - t \\ \text{Find } g(f(t)) \\ & 4t^2 - 4t - 3 \end{aligned}$$

$$13) \begin{aligned} g(x) &= 4x + 5 \\ h(x) &= x^2 + 1 \\ \text{Find } g(h(x)) \\ & 4x^2 + 9 \end{aligned}$$

$$10) \begin{aligned} f(a) &= 2a + 4 \\ \text{Find } f(f(a)) \\ & 4a + 12 \end{aligned}$$

$$12) \begin{aligned} g(x) &= x + 2 \\ h(x) &= -4x + 3 \\ \text{Find } g(h(x)) \\ & -4x + 5 \end{aligned}$$

$$14) \begin{aligned} g(n) &= 4n + 2 \\ h(n) &= -n + 3 \\ \text{Find } g(h(n)) \\ & -4n + 14 \end{aligned}$$

Perform the composition & evaluate for the given number.

$$15) \begin{aligned} g(x) &= 2x + 4 \\ f(x) &= 4x + 3 \\ \text{Find } g(f(-5)) \\ & -30 \end{aligned}$$

$$17) \begin{aligned} f(n) &= 2n - 4 \\ g(n) &= 4n + 4 \\ \text{Find } f(3) + g(3) \\ & 18 \end{aligned}$$

$$19) \begin{aligned} g(x) &= x - 1 \\ f(x) &= 4x + 3 \\ \text{Find } g(-4) + f(-4) \\ & -18 \end{aligned}$$

$$16) \begin{aligned} g(n) &= n^2 - 5n \\ f(n) &= -4n + 2 \\ \text{Find } g(f(2)) \\ & 66 \end{aligned}$$

$$18) \begin{aligned} f(x) &= 2x - 5 \\ g(x) &= x^2 - 5 \\ \text{Find } f(2) \cdot g(2) \\ & 1 \end{aligned}$$

$$20) \begin{aligned} h(a) &= a - 1 \\ g(a) &= -4a - 5 \\ \text{Find } h(-10) + g(-10) \\ & 24 \end{aligned}$$