

Composition of Functions

Perform the indicated operation.

1) $g(n) = -4n - 4$
 $h(n) = n^2 + 5 + n$
Find $(g \circ h)(n)$

2) $h(n) = n^2 - 5$
 $g(n) = -4n + 5$
Find $(h \circ g)(n)$

3) $g(a) = 3a - 4$
Find $(g \circ g)(a)$

4) $h(n) = 2n + 2$
 $g(n) = 2n$
Find $(h \circ g)(n)$

5) $f(n) = -4n + 1$
 $g(n) = -2n - 5$
Find $(f \circ g)(n)$

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

7) $f(t) = 2t + 5$
 $g(t) = t^3 - 2t^2$
Find $(f \circ g)(0)$

8) $g(a) = -4a - 3$
 $f(a) = a^2 - 5$
Find $(g \circ f)(1)$

9) $g(a) = 4a$
 $f(a) = 4a - 4$
Find $(g \circ f)(3)$

10) $g(x) = -3x - 4$
 $h(x) = 2x + 1$
Find $(g \circ h)(-5)$

11) $f(a) = 4a - 1$
 $g(a) = -3a^2 + 5$
Find $(f \circ g)(4)$

12) $g(n) = 3n^2 + 4n$
 $h(n) = 2n - 5$
Find $(g \circ h)(4)$

13) $g(n) = n^2 - 3n$
 $h(n) = 4n + 4$
Find $(g \circ h)(0)$

14) $g(n) = 4n$
 $h(n) = 4n + 4$
Find $(g \circ h)(-7)$

15) $f(t) = t + 3$
Find $(f \circ f)(5)$

Composition of Functions

Perform the indicated operation.

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

$$-4n^2 - 4n - 24$$

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

$$16n^2 - 40n + 20$$

$$3) \begin{aligned} g(a) &= 3a - 4 \\ \text{Find } (g \circ g)(a) \end{aligned}$$

$$9a - 16$$

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

$$4n + 2$$

$$5) \begin{aligned} f(n) &= -4n + 1 \\ g(n) &= -2n - 5 \\ \text{Find } (f \circ g)(n) \end{aligned}$$

$$8n + 21$$

$$6) \begin{aligned} h(a) &= 2a + 3 \\ g(a) &= a^2 + 2a \\ \text{Find } (h \circ g)(1) \end{aligned}$$

$$9$$

$$7) \begin{aligned} f(t) &= 2t + 5 \\ g(t) &= t^3 - 2t^2 \\ \text{Find } (f \circ g)(0) \end{aligned}$$

$$5$$

$$8) \begin{aligned} g(a) &= -4a - 3 \\ f(a) &= a^2 - 5 \\ \text{Find } (g \circ f)(1) \end{aligned}$$

$$13$$

9) $g(a) = 4a$
 $f(a) = 4a - 4$
Find $(g \circ f)(3)$

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10) $g(x) = -3x - 4$
 $h(x) = 2x + 1$
Find $(g \circ h)(-5)$

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11) $f(a) = 4a - 1$
 $g(a) = -3a^2 + 5$
Find $(f \circ g)(4)$

-173

12) $g(n) = 3n^2 + 4n$
 $h(n) = 2n - 5$
Find $(g \circ h)(4)$

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13) $g(n) = n^2 - 3n$
 $h(n) = 4n + 4$
Find $(g \circ h)(0)$

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14) $g(n) = 4n$
 $h(n) = 4n + 4$
Find $(g \circ h)(-7)$

-96

15) $f(t) = t + 3$
Find $(f \circ f)(5)$

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