

## Composition of Functions

**Perform the indicated operation.**

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

Find  $(g \circ h)(n)$

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

Find  $(h \circ g)(n)$

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

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

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

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

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

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

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

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

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

$16n^2 - 40n + 20$

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

$9a - 16$

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

$4n + 2$

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

$8n + 21$

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

$9$

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

$5$

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

$13$

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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