

Composite Functions Examples

Date _____

1) Find $f(g(x))$ when $f(x) = x - 5$
and $g(x) = 4x + 3$

2) Find $h(g(n))$ when $h(n) = 2n + 5$
and $g(n) = n + 4$

Perform the indicated operation.

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

4) $g(a) = a^2 + 1$
 $h(a) = 3a + 4$
Find $(g \circ h)(a)$

5) $h(x) = -2x^2 - 5$
 $g(x) = 2x - 1$
Find $(h \circ g)(x)$

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

7) $g(t) = t + 2$
 $f(t) = 2t$
Find $(g \circ f)(t)$

8) $f(t) = -t^2 - 3$
 $g(t) = -t$
Find $(f \circ g)(t)$

9) $g(x) = 3x + 2$
 $f(x) = x^3 - 3x^2$
Find $(g \circ f)(x)$

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

11) $f(x) = -3x^2 - 3x$
 $g(x) = 2x + 1$
 Find $(f \circ g)(0)$

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

13) $g(t) = 2t + 5$
 Find $(g \circ g)(2)$

14) $f(a) = -a - 4$
 $g(a) = 2a + 4$
 Find $(f \circ g)(2)$

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

16) $g(x) = x + 2$
 $h(x) = -2x^2 + 4x$
 Find $(g \circ h)(10)$

17) $f(x) = -2x - 3$
 $g(x) = x^2 + 4x$
 Find $(f \circ g)(-10)$

18) $g(x) = -x^2 - 5$
 Find $(g \circ g)(-1)$

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

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

Answers to Composite Functions Examples (ID: 1)

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|----------------------|----------------------|------------------------------|-------------|
| 1) $4x - 2$ | 2) $2n + 13$ | 3) $8x^3 - 24x^2 + 34x - 18$ | |
| 4) $9a^2 + 24a + 17$ | 5) $-8x^2 + 8x - 7$ | 6) $-9x^2 - 24x - 13$ | 7) $2t + 2$ |
| 8) $-t^2 - 3$ | 9) $3x^3 - 9x^2 + 2$ | 10) $3n^2 - n + 3$ | 11) -6 |
| 12) 85 | 13) 23 | 14) -12 | 15) -43 |
| 16) -158 | 17) -123 | 18) -41 | 19) 6 |
| 20) 14 | | | |