

Evaluating Functions and Function Composition (Composite Function)

Given: $f(x) = 2x - 1$; $g(x) = 5x$; $h(x) = x^2 + 1$

Evaluate:

1. $f(-3)$	2. $h(-3)$	3. $g(5) - h(2)$	4. $h(x) + f(x) + g(x)$
5. $h(x) - f(4)$	6. $g(3x - 7)$	7. $f(x^2)$	8. $f(h(1))$
9. $g(h(f(-2)))$	10. $f(h(x))$	11. $g(f(x))$	12. $h(g(x))$

13. Given the functions f and g , below, find the composition function $f \circ g$. (The function $(f \circ g)(x)$ is the same as $f(g(x))$).

(a) $f(x) = x^2$; $g(x) = \sqrt{x}$.

(b) $f(x) = x - 4$; $g(x) = x^2$.

(c) $f(x) = x^2 - 1$; $g(x) = x + 2$.

(d) $f(x) = x + 2$; $g(x) = x^2 - 1$.

14. Given: $f(x) = x + 3$ and $g(x) = x^2 - 10$

Find:

a) $g(f(x))$.

b) $f(f(x))$.

c) $g(g(x))$.

d) $g(f(2))$.

e) $f(f(-4))$.

f) $g(g(3))$.

g) $f(g(f(f(1))))$