



MAth on the Fly!



NAME: _____ DATE: _____

Composite Functions

Solve each problem below.

1. $f(x) = -3x + 7$
 $g(x) = 2x - 1$

- Find $(f \circ g)(x)$
- Find $(g \circ f)(x)$
- Find $(f \circ g)(-1)$
- Find $(g \circ f)(2)$

2. $f(x) = x^2 - 3$
 $g(x) = x + 10$

- Find $f(g(x))$
- Find $g(f(x))$
- Find $f(g(4))$
- Find $g(f(0))$

3. $f(x) = \sqrt{x + 6}$
 $g(x) = x - 6$

- Find $(f \circ g)(x)$
- Find $(g \circ f)(x)$
- Find $(f \circ g)(9)$
- Find $(g \circ f)(-2)$

4. $f(x) = |x - 4|$
 $g(x) = 7x + 1$

- Find $f(g(x))$
- Find $g(f(x))$
- Find $f(g(0))$
- Find $g(f(-2))$

5. $f(x) = x^2 + x - 3$
 $g(x) = 2x$

- Find $(f \circ g)(x)$
- Find $(g \circ f)(x)$
- Find $(f \circ g)(-1)$
- Find $(g \circ f)(3)$

6. $f(x) = 4x - 2$
 $g(x) = -x + 5$

- Find $f(g(x))$
- Find $g(f(x))$
- Find $f(g(-3))$
- Find $g(f(1))$

SOLUTIONS

1.

- a. $(f \circ g)(x) = -6x + 10$
- b. $(g \circ f)(x) = -6x + 13$
- c. $(f \circ g)(-1) = 16$
- d. $(g \circ f)(2) = 1$

2.

- a. $f(g(x)) = (x + 10)^2 - 3$
 $= x^2 + 20x + 97$
- b. $g(f(x)) = x^2 + 7$
- c. $f(g(4)) = 193$
- d. $g(f(0)) = 7$

3.

- a. $(f \circ g)(x) = \sqrt{x}$
- b. $(g \circ f)(x) = \sqrt{x + 6} - 6$
- c. $(f \circ g)(9) = 3$
- d. $(g \circ f)(-2) = -4$

4.

- a. $f(g(x)) = |7x - 3|$
- b. $g(f(x)) = 7|x - 4| + 1$
- c. $f(g(0)) = 3$
- d. $g(f(-2)) = 43$

5.

- a. $(f \circ g)(x) = 4x^2 + 2x - 3$
- b. $(g \circ f)(x) = 2x^2 + 2x - 6$
- c. $(f \circ g)(-1) = -1$
- d. $(g \circ f)(3) = 18$

6.

- a. $f(g(x)) = -4x + 18$
- b. $g(f(x)) = -4x + 7$
- c. $f(g(-3)) = 30$
- d. $g(f(1)) = 3$