

NAME _____

Module 9 Using Functions
Lesson 6 Evaluating Composite Functions



guided
practice

Set 1

1. Evaluate
- $(f \circ g)(2)$
- and
- $(g \circ f)(2)$
- .

$$f(x) = x - 6$$

$$g(x) = 3x^2$$

$$(f \circ g)(2) = \underline{6}$$

$$(g \circ f)(2) = \underline{48}$$

3. Evaluate
- $f(g(-1))$
- and
- $g(f(-1))$
- .

$$f(x) = -2x$$

$$g(x) = x^3$$

$$f(g(-1)) = \underline{2}$$

$$g(f(-1)) = \underline{8}$$

2. Evaluate
- $(f \circ g)(5)$
- and
- $(g \circ f)(5)$
- .

$$f(x) = x - 4$$

$$g(x) = x^2 + 3$$

$$(f \circ g)(5) = \underline{24}$$

$$(g \circ f)(5) = \underline{4}$$

4. Evaluate
- $f(g(0))$
- and
- $g(f(0))$
- .

$$f(x) = \frac{1}{3}x - \frac{1}{3}$$

$$g(x) = 3x + 1$$

$$f(g(0)) = \underline{0}$$

$$g(f(0)) = \underline{0}$$

Set 2

1. Find
- $(f \circ g)(x)$
- and
- $(g \circ f)(x)$
- .

$$f(x) = x - 4$$

$$g(x) = x + 3$$

$$(f \circ g)(x) = \underline{x - 1}$$

$$(g \circ f)(x) = \underline{x - 1}$$

3. Find
- $f(g(x))$
- and
- $g(f(x))$
- .

$$f(x) = 6x$$

$$g(x) = x^2$$

$$f(g(x)) = \underline{6x^2}$$

$$g(f(x)) = \underline{36x^2}$$

2. Find
- $(f \circ g)(x)$
- and
- $(g \circ f)(x)$
- .

$$f(x) = \frac{1}{2}x$$

$$g(x) = \frac{2}{5}x$$

$$(f \circ g)(x) = \underline{\frac{1}{5}x}$$

$$(g \circ f)(x) = \underline{\frac{1}{5}x}$$

Set 3

1. Determine if the two functions are inverses of each other.

$$f(x) = \frac{1}{3}x - 2$$

$$g(x) = 3x + 6$$

$$f(g(x)) = g(f(x)) = x$$

The functions are inverses.

2. Determine if the two functions are inverses of each other.

$$f(x) = \frac{1}{4}x + 2$$

$$g(x) = 4x - 12$$

$$f(g(x)) = x - 1$$

$$g(f(x)) = x - 4$$

The functions are not inverses.