Name _____
5.1 Practice

EVALUATING A COMPOSITE FUNCTION
For the given functions *f* and *g*, find
a) $(f \circ g)(4)$ **b)** $(g \circ f)(2)$ **c)** $(f \circ f)(1)$ **d)** $(g \circ g)(0)$

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

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

FINDING THE DOMAIN OF A COMPOSITE FUNCTION
FINDING A COMPOSITE FUNCTION
For the given functions *f* and *g*, find
a) $(f \circ g)$ **b)** $(g \circ f)$ **c)** $(f \circ f)$ **d)** $(g \circ g)$
State the domain of each composite function.

3. $f(x) = -x$
   $g(x) = 2x - 4$

4. $f(x) = \dfrac{1}{x+3}$
   $g(x) = \dfrac{-2}{x}$

5. $f(x) = \dfrac{x}{x+3}$
   $g(x) = \dfrac{2}{x}$

6. $f(x) = x^2 + 4$
   $g(x) = \sqrt{x-2}$

SHOWING THAT TWO COMPOSITE FUNCTIONS ARE EQUAL

Show that $(f \circ g)(x) = (g \circ f)(x) = x$

7. $f(x) = 2x - 6$, $g(x) = \frac{1}{2}(x + 6)$

8. $f(x) = \frac{1}{x}$, $g(x) = \frac{1}{x}$

FINDING THE COMPONENTS OF A COMPOSITE FUNCTION

Find functions *f* and *g* so that $f \circ g = H$

9. $H(x) = \sqrt{1 - x^2}$

10. $H(x) = |2x + 1|$