

Topic 8.7  
Composition of Functions  
Homework

Name: \_\_\_\_\_

Date: \_\_\_\_\_

**Find  $g[h(x)]$ .**

1.  $g(x) = 4x + 5$

$h(x) = 3x^2 + 7$

2)  $g(x) = x^2 - 4$

$h(x) = x + 6$

3)  $g(x) = \frac{2x^2 + 3x}{x - 2}$

$h(x) = x + 2$

**Find  $[f \circ g](4)$  and  $[g \circ f](4)$**

4)  $f(x) = 3x$

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

$(f \circ g)(4) = 39$

$(g \circ f)(4) = 141$

5)  $f(x) = 8 - 2x$

$g(x) = 3\sqrt{x^2 + 9}$

$(f \circ g)(4) = -22$

$(g \circ f)(4) = 9$

6)  $f(x) = \frac{x^2 + 2x}{2}$

$g(x) = \sqrt[3]{2x} - 4\sqrt{x}$

$(f \circ g)(4) = 12$

$(g \circ f)(4) = -6$

**If  $f(x) = 2x^2$ ,  $g(x) = \frac{3x-4}{2}$ , and  $h(x) = 3\sqrt{4x}$ , find each value.**

7)  $f[h(9)]$

648

8)  $g[f(-3)]$

25

9)  $[f \circ (g \circ h)](4)$

512

10)  $g[h(\frac{9}{4})]$

$\frac{23}{2}$

11)  $[f \circ (h \circ g)](5)$

396