

Name \_\_\_\_\_ Period \_\_\_\_\_ Date \_\_\_\_\_

**SHORT ANSWER.** Write the word or phrase that best completes each statement or answers the question.**Perform the requested operation or operations.**

1)  $f(x) = x^2 + 1$ ;  $g(x) = \sqrt{x - 3}$

Find  $f(g(x))$ .

2)  $f(x) = \sqrt{x + 4}$ ;  $g(x) = 8x - 8$ , find  $f(g(x))$ .

3)  $f(x) = \frac{x - 5}{8}$ ;  $g(x) = 8x + 5$ , find  $g(f(x))$ .

4)  $f(x) = \frac{1}{x - 3}$ ;  $g(x) = \sqrt{x}$

Find  $f(g(x))$ .

5)  $f(x) = \frac{1}{x - 6}$ ;  $g(x) = \sqrt{x}$

Find  $g(f(x))$ .**MULTIPLE CHOICE.** Choose the one alternative that best completes the statement or answers the question.**Find functions  $f$  and  $g$  so that  $h(x) = f(g(x))$ .**

6)  $h(x) = \frac{2}{x^2} + 10$

A)  $f(x) = 1/x$ ,  $g(x) = 2/x + 10$

C)  $f(x) = 2/x^2$ ,  $g(x) = 10$

B)  $f(x) = x + 10$ ,  $g(x) = 2/x^2$

D)  $f(x) = x$ ,  $g(x) = 2/x + 10$

7)  $h(x) = (6x + 9)^9$

A)  $f(x) = x^9$ ,  $g(x) = 6x + 9$

C)  $f(x) = 6x^9$ ,  $g(x) = x + 9$

B)  $f(x) = (6x)^9$ ,  $g(x) = 9$

D)  $f(x) = 6x + 9$ ,  $g(x) = x^9$

8)  $h(x) = \sqrt{-29x^2 + 10}$

A)  $f(x) = -29x^2 + 10$ ,  $g(x) = \sqrt{x}$

C)  $f(x) = \sqrt{-29x^2}$ ,  $g(x) = \sqrt{10}$

B)  $f(x) = \sqrt{x}$ ,  $g(x) = -29x^2 + 10$

D)  $f(x) = \sqrt{-29x + 10}$ ,  $g(x) = x^2$

9)  $h(x) = \frac{1}{x^2 - 8}$

A)  $f(x) = 1/x$ ,  $g(x) = x^2 - 8$

C)  $f(x) = 1/x^2$ ,  $g(x) = -1/8$

B)  $f(x) = 1/x^2$ ,  $g(x) = x - 8$

D)  $f(x) = 1/8$ ,  $g(x) = x^2 - 8$

**SHORT ANSWER.** Write the word or phrase that best completes each statement or answers the question.

10)  $h(x) = \frac{10}{\sqrt{9x + 7}}$