Composition of Functions

MULTIPLE CHOICE. Choose the one alternative that best completes the statement or answers the question.

For the given functions f and g , find the indicated composition.

1) $f(x) = 5x + 10$, $g(x) = 3x - 1$ 1) _____

$(f \circ g)(x)$

A) $15x + 9$ B) $15x + 15$ C) $15x + 29$ D) $15x + 5$

2) $f(x) = 4x^2 + 6x + 8$, $g(x) = 6x - 5$ 2) _____

$(g \circ f)(x)$

A) $24x^2 + 36x + 43$ B) $4x^2 + 36x + 43$

C) $4x^2 + 6x + 3$ D) $24x^2 + 36x + 53$

3) $f(x) = \sqrt{x + 4}$, $g(x) = -\frac{5}{x}$ 3) _____

$(g \circ f)(x)$

A) $\sqrt{-\frac{5}{x} + 4}$ B) $-\frac{1}{\sqrt{5x + 4}}$ C) $\frac{5}{\sqrt{-x + 4}}$ D) $-\frac{5}{\sqrt{x + 4}}$

4) $f(x) = \frac{x - 5}{7}$, $g(x) = 7x + 5$ 4) _____

$(g \circ f)(x)$

A) $x + 10$ B) $x - \frac{5}{7}$ C) $7x + 30$ D) x

Find the requested function value.

5) Find $(f \circ g)(3)$ when $f(x) = -8x + 5$ and $g(x) = -3x^2 - 7x + 5$. 5) _____

A) -945 B) 349 C) 195 D) 205

6) Find $(g \circ f)(13)$ when $f(x) = \frac{x - 3}{2}$ and $g(x) = 3x + 1$. 6) _____

A) 200 B) 20 C) $\frac{37}{2}$ D) 16

Find the requested value.

7) Using the given tables, find $(f \circ g)(2)$ 7) _____

x	9	5	1	3
f(x)	18	10	2	6

x	4	2	5	3
g(x)	7	3	9	5

A) 6 B) 10 C) 3 D) 2

Consider the function h as defined. Find functions f and g so that $(f \circ g)(x) = h(x)$.

8) $h(x) = (-6x + 9)^2$ 8) _____

A) $f(x) = (-6x)^2$, $g(x) = 9$ B) $f(x) = x^2$, $g(x) = -6x + 9$

C) $f(x) = -6x + 9$, $g(x) = x^2$ D) $f(x) = -6x^2$, $g(x) = x + 9$

Answer Key
Testname: COMPOSITION OF FUNCTIONS

1) D
2) A
3) D
4) D
5) B
6) D
7) A
8) B