Date Completed: _____
Mentor Initials: _____

Functions (Basic)

Multiple Choice

1. Given that $f(x) = 3x^2 + 8$, what is the value of $f(4)$?
A) 16
B) 24
C) 48
D) 56

2. Given that $f(x) = 8x + 8$, what is the value of x when $f(x) = 8$?
A) -8
B) 0
C) 8
D) 72

3. Function $f(x)$ is defined as $f(x) = -\frac{x^2}{4}$. What is the value of $f(-8) - f(4)$?
A) -20
B) -12
C) 4
D) 20

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

The functions f and g are defined above. Which of the following is equivalent to $f(x) - g(x)$?
A) $2x^2 + 2x - 4$
B) $2x^2 + 2x + 4$
C) $4x^2 + 2x - 4$
D) $4x^2 + 2x + 4$

5.
$$f(x) = x + 5$$
$$g(x) = x - 9$$

The functions f and g are defined above. Which of the following is equivalent to $f(x) \cdot g(x)$?
A) $x - 4$
B) $x^2 - 45$
C) $x^2 + 4x + 45$
D) $x^2 - 4x - 45$

Grid-In

6. Given that $g(x) = \frac{x^2}{4}$, what is the value of $g(x)$ when $x = 2$?

7. $$f(x) = 2x^3 - a$$

For the function f defined above, a is a constant, and $f(3) = 50$. What is the value of $f(2)$?

8. $$f(x) = 5x + 3$$
$$g(x) = 12x - 6$$

The functions f and g are defined above. What is the value of $f(3) + g(3)$?

9. $$g(x) = -3x - 6$$
$$h(x) = 1 + g(x)$$

The functions g and h are defined above. What is the value of $h(-2)$?

10. If two functions are defined as $f(x) = -6x + 7$ and $g(x) = x^2 + 4$, what is the value of x when $g(x) + f(x) = 2$?