

Unit 5: Functions

ADVANCED · SET 2

Name: _____ Date: _____

Show all work. Give each answer as an exact value (number, fraction, or coordinate pair) using plain-text notation.

1. Let $f(x) = 3x^2 - 5x + 7$. Evaluate $f(-4)$.

Answer: _____

2. Let $g(x) = (2x - 9)/(x + 3)$. Evaluate $g(6)$.

Answer: _____

3. A function is defined by $f(x) = 5x - 8$. If $f(c) = 42$, find c .

Answer: _____

4. Let $f(x) = \sqrt{3x + 4}$. Find the smallest value of x in the domain of f (i.e., the left endpoint where $3x + 4 = 0$).

Answer: _____

5. The domain of $f(x) = 7/(2x - 5)$ is all real numbers except one value. Find the excluded x -value.

Answer: _____

6. For the quadratic $f(x) = x^2 - 12x + 20$, the graph is a parabola. Find the x -coordinate of the vertex.

Answer: _____

7. For the quadratic $f(x) = x^2 - 12x + 20$, find the minimum value of the function (the y -coordinate of the vertex).

Answer: _____

8. Let $f(x) = 2x^2 - 7x - 15$. Find the sum of the x -intercepts (zeros) of f .

Answer: _____

9. Let $f(x) = 4x + 1$ and $g(x) = x^2 - 3$. Compute $f(g(2))$.

Answer: _____

10. A linear function f satisfies $f(2) = 11$ and $f(8) = 35$. Find $f(0)$.

Answer: _____

11. The range of $f(x) = -3(x - 4)^2 + 17$ is all real numbers y with $y \leq M$. Find M .

Answer: _____