

1. Evaluate f composed with g at $x = 1$.

$$f(x) = 4x^3 + 2x^2 - 3x - 4 \text{ and } g(x) = -x^3 - 2x^2 + 4x - 4$$

2. Find the inverse of the function below (if it exists). If the inverse exists, evaluate the inverse at $x = -12.0$

$$f(x) = \sqrt[3]{4x + 3}$$

3. Find the inverse of the function below (if it exists). If the inverse exists, evaluate the inverse at $x = 9$.

$$f(x) = \ln(x - 2) - 4$$

4. Determine whether the function below is 1-1. Provide reasoning for your response.

$$f(x) = -25x^2 + 195x - 360$$

5. Add the following functions and write the domain of the resulting function.

$$f(x) = x^4 + 9x^3 + 7x^2 + 7x + 3 \text{ and } g(x) = 6x^2 + 2x + 1$$

6. Find the inverse of the function below (if it exists). If the inverse exists, evaluate the inverse at $x = -15.0$

$$f(x) = 5x^2 + 4$$

7. Find the inverse of the function below (if it exists). If the inverse exists, evaluate the inverse at $x = 9$.

$$f(x) = \ln(x + 4) + 3$$

8. Add the following functions and write the domain of the resulting function.

$$f(x) = \frac{3}{5x + 17} \text{ and } g(x) = 4x^3 + 8x^2 + 5x + 6$$

9. Determine whether the function below is 1-1. Provide reasoning for your response.

$$f(x) = (5x + 36)^3$$

10. Evaluate f composed with g at $x = 1$.

$$f(x) = 2x^3 - 3x^2 + 2x \text{ and } g(x) = 4x^3 - 3x^2 - 4x + 4$$