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

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

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

$$f(x) = 3x^2 + 5$$

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

$$f(x) = \ln(x + 3) - 2$$

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

$$f(x) = -15x^2 - 148x - 357$$

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

$$f(x) = \frac{4}{3x - 10} \text{ and } g(x) = \frac{1}{3x - 10}$$

6. Find the inverse of the function below (if it exists). If the inverse exists, evaluate the inverse at $x = 14.0$

$$f(x) = \sqrt[3]{4x - 2}$$

7. Find the inverse of the function below (if it exists). If the inverse exists, evaluate the inverse at $x = 8$.

$$f(x) = e^{x+4} + 5$$

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

$$f(x) = \frac{1}{5x + 16} \text{ and } g(x) = 7x^3 + 8x^2 + 6x + 9$$

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

$$f(x) = -20x^2 - 151x - 285$$

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

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