

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 $x = -1$.

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

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

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

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

$$f(x) = 5x^2 - 2$$

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

$$f(x) = e^{x-3} + 5$$

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

$$f(x) = 36x^2 - 192x + 256$$

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

$$f(x) = 6x + 7 \text{ and } g(x) = \sqrt{-6x + 22}$$

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

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

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

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

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

$$f(x) = 7x^3 + 7x + 1 \text{ and } g(x) = \sqrt{5x + 26}$$

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

$$f(x) = (6x + 31)^3$$

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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