Questions

Differentiate the function

Power Rule

1. $g(x) = 4x + 7$

2. $f(x) = x^{75} - x + 3$

3. $W(v) = 1.8v^{-3}$

4. $f(x) = x^{3/2} + x^{-3}$

5. $s(t) = \frac{1}{t} + \frac{1}{t^2}$

Product Rule

6. $y = (4x^2 + 3)(2x + 5)$

7. $y = (10x^2 + 7x - 2)(2 - x^2)$

8. $f(x) = (\frac{1}{x} + \frac{1}{x^2})(x + \frac{1}{x})$

9. $h(w) = (w^2 + 3w)(w^{-1} - w^{-4})$

10. $H(u) = (u - \sqrt{u})(u + \sqrt{u})$

Quotient Rule

11. $f(x) = \frac{5x}{x^3 - x - 1}$

12. $G(u) = \frac{6u^4 - 5u}{u + 1}$

13. $f(x) = \frac{1}{2x^3 - 6x^2 + 5}$

14. $f(t) = \frac{\sqrt[3]{t}}{t-3}$

15. $f(x) = \frac{x}{x + \frac{c}{x}}$

Chain Rule

16. $f(x) = (2x^3 - 5x^2 + 4)^5$

17. $f(x) = \sqrt{5x+1}$

18. $y = \frac{1}{(2x+1)^2}$

19. $y = \sqrt{\frac{x}{x+1}}$

20. $y = (x + \frac{1}{x})^5$

Trigonometric Function

21. $f(x) = \cos(x+1)$

22. $y = 4\sin(x^2 - 1)$

23. $y = \sin(x)\cos(1 - x^2)$

24. $f(x) = \tan(\sqrt{1+ t^2})$

25. $y = \sin^2(x^2 + 1)$

Exponential Function

26. $y = 4e^x + 1$

27. $y = e^{x^2-x}$

28. $f(x) = 2^{x^3}$

29. $f(x) = e^{z/(z-1)}$

30. $y = x^2e^{-3x}$

Challenge Questions