

AP Calculus AB - Worksheet 25

Product and Quotient Rules for Derivatives

Differentiate the following functions. **Do not simplify the answer**

1. $g(t) = 6t^{\frac{5}{3}}$

2. $B(x) = \frac{8x^2 - 6x + 11}{x - 1}$

3. $h(z) = 8z^{\frac{3}{5}}$

4. $G(v) = \frac{v^3 - 1}{v^3 + 1}$

5. $f(s) = 15 - s - 4s^2 - 5s^4$

6. $M(x) = \frac{2x^3 - 7x^2 + 4x + 3}{x^2}$

7. $f(x) = 3x^2 + \sqrt[3]{x^4}$

8. $f(x) = \frac{1}{1 + x + x^2 + x^3}$

9. $g(x) = x^4 - \sqrt[4]{x^3}$

10. $p(x) = 1 + \frac{1}{x} + \frac{1}{x^2} + \frac{1}{x^3}$

11. $k(x) = (2x^2 - 4x + 1)(6x - 5)$

12. $F(t) = t^2 + \frac{1}{t^2}$

13. $f(x) = \frac{4x - 5}{3x + 2}$

14. $h(x) = (5x - 4)^2$

15. $k(r) = r^3(3r^4 - 7r^2 + 2r)$

16. $S(x) = (3x + 1)^{-2}$

17. $H(z) = (z^5 - 2z^3)(7z^2 + z + 2)$

18. $N(z) = \frac{4z^2}{3z + 2}$