
Example: $f(x) = 4(1+7x)^9 \Rightarrow f'(x) = (9)(4)(1+7x)^{(9-1)}(7) = 252(1+7x)^8$

For problems 1-14, find $f'(x)$

1. $f(x) = (3x+2)^8$

2. $f(x) = (1-x)^6$

3. $f(x) = (1-2x^2)^3$

4. $f(x) = (x^2+3x+1)^5$

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

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

7. $f(x) = (2x^2-3x+1)^4$

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

9. $f(x) = \frac{1}{\sqrt[3]{x^3+3}}$

10. $f(x) = (x^2-4)^{-\frac{1}{2}}$

11. $f(x) = 6x^4 - 8x^3$

12. $f(x) = \frac{2}{3x-5}$

13. $f(x) = (x^3-2x)(3x^2)$

14. $f(x) = \frac{1}{x^5}$

Write the equation of the normal line at the given x -value.

15. $f(x) = 2x^3 - 2x - 7$ when $x = -1$

16. $f(x) = (2x+3)^3$ when $x = 0$

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

18. $f(x) = \frac{2}{x^3}$ when $x = 2$