

Differentiation

1. $f(x) = x^7 + x^3$
2. $f(x) = 6x^8 - 4x$
3. $f(x) = 3x^2 + 5x - 9$
4. $f(x) = (3x + 7)(2x - 9)$
5. $f(x) = x^{-4}(x^2 + x^6)$
6. $f(x) = 5x^2(3x^2 - 7x - 2)$
7. $f(x) = \frac{x^5 + x^8}{x^2}$
8. $f(x) = \frac{9x^7 - 2x^5}{x^3}$
9. $f(x) = \frac{x^7 + 2x}{x^5}$
10. $f(x) = (5 - x)^2$
11. $y = x^4 + \frac{1}{x} - \frac{3}{\sqrt{x}}$
12. $y = \frac{10x^6 - 3x^5}{2x^2}$
13. $y = \frac{7x + 3 + \sqrt{x}}{x}$
14. $y = (\sqrt{x} + \frac{1}{\sqrt{x}})^2$
15. $y = 2x^2(1 - 4x - 8x^2)$
16. $y = (\sqrt{x} + 3)(2\sqrt{x} + 5)$
17. $y = \frac{5\sqrt{x} - 3x}{\sqrt{x}}$
18. $y = x^{-\frac{1}{2}} + 4x^{-\frac{3}{2}} - x^{\frac{1}{2}}$
19. $y = \frac{(2x-3)^2}{x^2}$
20. $y = \frac{4}{x} + \frac{3}{x^2}$
21. $\frac{d}{dx}(3x^4 - 2x^3 + 5x^2 - x - 1)$
22. $\frac{d}{dx}(x^{\frac{2}{3}} + \sqrt{x})$
23. $\frac{d}{dx}4\sqrt{x}(3\sqrt{x} + x)$
24. $\frac{d}{dx}\left(\frac{7x-4-2x^5}{x^3}\right)$
25. $\frac{d}{dx}(x^2 + 7)^2$
26. $\frac{d}{dx}(ax^2 + bx + c)$
27. $\frac{d}{dx}\sqrt{x}(x^2 + 8)$
28. $\frac{d}{dx}\left(\frac{12x^2 - x^3}{3x^5}\right)$
29. $f(x) = \frac{6}{\sqrt[3]{x}} + 4\sqrt{x}$
30. $f(x) = \frac{1}{3}x^{\frac{3}{2}} - \frac{1}{5}x^{\frac{5}{2}}$
31. $f(x) = x(x - 2)^2$
32. $f(x) = \frac{x+3}{\sqrt{x}}$
33. $f(x) = \frac{12x^3 - 5x}{3x^4}$
34. $f(x) = (\sqrt{x} - 4)^2$
35. $f(x) = 5x - \frac{1}{2\sqrt{x}}$
36. $f(x) = \frac{(\sqrt{x}-x)^2}{\sqrt{x}}$
37. $y = \sqrt{4x - 1}$
38. $y = (x^2 + 4)^5$
39. $y = \frac{1}{(1-x)^5}$
40. $y = \frac{5}{2x+7}$
41. $y = \frac{3}{\sqrt{5+2x}}$
42. $y = \frac{2}{3-4x}$
43. $y = \frac{1}{\sqrt[3]{4x-3}}$
44. $y = \sqrt{5 + 3x^3}$
45. $y = \frac{6}{2x^2 + 3x}$
46. $y = \frac{1}{2(1-3x^2)^4}$
47. $\frac{1}{9x+8}$
48. $\sqrt{8 - 7x}$
49. $\sqrt{2x^4 + 7}$
50. $\frac{3}{\sqrt{3-x^2}}$
51. $\frac{1}{(4x-5)^4}$
52. $\frac{2}{\sqrt[4]{5+3x}}$
53. $(3x^2 - 2)^4$
54. $\sqrt{5x - 2x^2}$
55. $\frac{1}{x(5-3x^2)}$
56. $\frac{1}{1+\sqrt{x}}$