

73 DERIVADAS

■ Hallar las derivadas **simplificadas** de las siguientes funciones:

1. $y=3$

2. $y=x$

3. $y=5x$

4. $y=x^3$

5. $y=x^4+x^3+x^2+x+1$

6. $y=4x^4-x^3+3x^2-7$

7. $y=-\frac{x^5}{5}+4x^4-\frac{x^3}{6}+\frac{x^2}{2}-3$

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

9. $y=4(3x^3-2x^2+5)+x^2+1$

10. $y=\frac{2x^3-3x^2+4x-5}{2}$

11. $y=(x^2+1)(2x^3-4)$

12. $y=1/x$

13. $y=1/x^3$

14. $y=2/x^5$

15. $y=\frac{2}{x^3}+\frac{1}{x^2}-\frac{3}{x}$

16. $y=\sqrt{x}$

17. $y=\sqrt[3]{x^2}$

18. $y=\sqrt[5]{x^3}$

19. $y=2\sqrt[3]{x^2}-3x^2+\frac{1}{5}$

20. $y=(x+1)^5$

21. $y=(2x^2-3x+1)^3$

22. $y=(x^2+1)^{100}$

23. $y=\frac{x+1}{x-1}$

24. $y=\frac{1}{x^2+1}$

25. $y=3\frac{2x^2-1}{x^3+1}$

26. $y=\left(\frac{2x-3}{x+4}\right)^4$

27. $y=\sqrt{x^2+1}$

28. $y=2\sqrt{x^3-x^2+1}(2x^2+3)$

29. $y=\frac{x^3}{3}-\frac{3x^4}{4}+\frac{x^2}{2}-\frac{1}{x}$

30. $y=2/x$

31. $y=3(x^2-x+1)(x^2+x-1)$

32. $y=\frac{x^2-1}{x^2+1}$

33. $y=x/2$

34. $y=\frac{1}{x}+\frac{2}{x^2}+\frac{3}{x^3}$

35. $y=(2x^2-1)(x^2-2)(x^3+1)$

36. $y=\sqrt{\frac{1-x^3}{x^2+1}}$

37. $y=(x^2+1)(3x+2)^3$

38. $y=(3x^2+2)(2x+1)^3$



$$39. y = \frac{1}{3x^5 - x^3 + 2}$$

$$40. y = \sqrt{x^4 - 2x^2 + 3}$$

$$41. y = \sqrt{\frac{x^2 + 1}{x^2 - 1}}$$

$$42. y = \sqrt[5]{x^2 + 1}$$

$$43. y = \frac{x^4 - 2x^2 + 1}{5}$$

$$44. y = \frac{5}{x^4 - 2x^2 + 1}$$

$$45. y = 3(x+1)^3 \sqrt[3]{x+1}$$

$$46. y = x^3 \sqrt{x}$$

$$47. y = \sqrt[3]{\frac{1}{2x+1}}$$

$$48. y = 2x(x^2+1)(2x-1)(x+2)$$

$$49. y = 3 \frac{(x-1)^2(x+2)}{x+1}$$

$$50. y = \frac{2x+4}{\sqrt{x+3}}$$

$$51. y = \frac{3x^4}{4} - \frac{2x^3}{3} + \frac{x^2}{2} - \frac{x}{5} + \frac{1}{x}$$

$$52. y = \sqrt[4]{(x^4 - 1)^3}$$

$$53. y = \frac{1}{(x^2 + 1)^3}$$

$$54. y = \frac{2x^2 - 3}{3x^2 - 2}$$

$$55. y = \frac{2x^2 + 1}{x^2 - 4}$$

$$56. y = 2(3x^2 - 2)^3$$

$$57. y = \frac{x+2}{\sqrt{x+1}}$$

$$58. y = \frac{3}{x^3} - \frac{2}{x^2} + \frac{4}{x}$$

$$59. y = \frac{x^5}{5} - \frac{x^3}{3} + \frac{x^2}{2} - \frac{x}{5} + \sqrt{x}$$

$$60. y = \sqrt[3]{(x^3 - 2)^{\frac{2}{3}}}$$

$$61. y = \sqrt{\frac{2}{x}}$$

$$62. y = 1 + \frac{x^3 - 3}{x^3 + 2}$$

$$63. y = \left(\frac{x+1}{x-1}\right)^3$$

$$64. y = \sqrt[4]{x^3} + \frac{1}{2x^2}$$

$$65. y = \frac{\sqrt{x+1}}{x+2}$$

$$66. y = \frac{x+2}{\sqrt{x+1}}$$

$$67. y = (x^2 - 3)^3 (2x - 1)$$

$$68. y = \frac{1}{2\sqrt{x}}$$

$$69. y = \frac{x^2 + x + 1}{x^2 - x + 1}$$

$$70. y = \sqrt[3]{x^2 + 1}$$

$$71. y = \sqrt[3]{\frac{2}{x}}$$

$$72. y = \frac{x}{2} \sqrt{24 - x^2}$$

$$73. y = \frac{4}{(2x+2)^2}$$