

LISTA 01 - DERIVADAS

Nos exercícios de 1 a 68 calcular a derivada.

1. $f(x) = 10(3x^2 + 7x - 3)^{10}$
2. $f(x) = \frac{1}{3}(2x^5 + 6x^{-3})^5$
3. $f(x) = \frac{1}{a}(bx^2 + ax)^3$
4. $f(x) = (3x^2 - 6x)^{10} - \frac{1}{x^2}$
5. $f(t) = (7t^2 + 6t)^7(3t - 1)^4$
6. $f(x) = (5x - 2)^6(3x - 1)^3$
7. $f(t) = \left(\frac{7t + 1}{2t^2 + 3}\right)^3$
8. $f(x) = (2x - 5)^4 + \frac{1}{x + 1} - \sqrt{x}$
9. $f(x) = \sqrt[3]{(3x^2 + 6x - 2)^2}$
10. $f(t) = (4t^2 - 5t + 2)^{-1/3}$
11. $f(x) = \frac{2x}{\sqrt{3x - 1}}$
12. $f(x) = \frac{7x^2}{2\sqrt[5]{3x + 1}} + \sqrt{3x + 1}$
13. $f(t) = \sqrt{\frac{2t + 1}{t - 1}}$
14. $f(x) = 2e^{3x^2 + 6x + 7}$
15. $f(x) = \frac{1}{3}e^{3-x}$
16. $f(x) = e^{\sqrt{x}}$
17. $f(x) = 2^{3x^2 + 6x}$
18. $f(x) = \left(\frac{1}{2}\right)^{-\ln 2x}$
19. $f(s) = (7s^2 + 6s - 1)^3 + 2e^{-3s}$
20. $f(t) = \frac{e^{-t^2} + 1}{t}$
21. $f(t) = e^{t/2}(t^2 + 5t)$
22. $f(t) = \frac{\sqrt{e^t - 1}}{\sqrt{e^t + 1}}$
23. $f(x) = \log_2(2x + 4)$
24. $f(x) = \frac{1}{a}(bx^2 + c) - \ln x$
25. $f(s) = \log_3 \sqrt{s + 1}$
26. $f(x) = \frac{1}{2} \ln(7x^2 - 4)$
27. $f(x) = \ln\left(\frac{1}{x} + \frac{1}{x^2}\right)$
28. $f(x) = \ln\left(\frac{1 + x}{1 - x}\right)$
29. $f(x) = \frac{a^{3x^2}}{b^{3x^2 - 6x}}$
30. $f(t) = \left(\frac{a}{b}\right)^{\sqrt{t}}$
31. $f(t) = (2t + 1)^{t^2 - 1}$
32. $f(x) = (e^{x^2} + 4)^{\sqrt{x}}$
33. $f(s) = \frac{1}{2}(a + bs)^{\ln(a + bs)}$
34. $f(x) = \text{sen}(2x + 4)$
35. $f(u) = \cos\left(\frac{\pi}{2} - u\right)$
36. $f(\theta) = 2 \cos(2\theta^2 - 3\theta + 1)$

37. $f(\theta) = 2 \cos(\theta^2) \sin(2\theta)$
38. $f(\alpha) = \frac{1 + \cos(2\alpha)}{2}$
39. $f(x) = \sin^3(3x^2 + 6x)$
40. $f(\theta) = \sin^2(\theta) + \cos^2(\theta)$
41. $f(x) = 3 \operatorname{tg}(2x + 1) + \sqrt{x}$
42. $f(s) = \operatorname{cotg}^4(2s - 3)^2$
43. $f(x) = \frac{3 \sec^2 x}{x}$
44. $f(x) = \left(\frac{1}{\sin x} \right)^2$
45. $f(x) = e^{2x} \cos(3x)$
46. $f(x) = \frac{\sin(x + 1)}{e^x}$
47. $f(\theta) = -\csc^2(\theta^3)$
48. $f(x) = \sin^2\left(\frac{x}{2}\right) \cos^2\left(\frac{x}{2}\right)$
49. $f(x) = a\sqrt{\cos(bx)}$
50. $f(t) = \ln(\cos^2 t)$
51. $f(u) = (u \operatorname{tg} u)^2$
52. $f(x) = \log_2(3x - \cos(2x))$
53. $f(\theta) = a^{\cot \theta}, a > 0$
54. $f(t) = e^{2 \cos(2t)}$
55. $f(x) = \operatorname{arcsen}^2(x)$
56. $f(x) = \arccos\left(\frac{2x}{3}\right)$
57. $f(t) = t \arccos(3t)$
58. $f(s) = \frac{\operatorname{arcsen}\left(\frac{s}{2}\right)}{s + 1}$
59. $f(t) = \arccos(\sin t)$
60. $f(x) = \operatorname{arctg}\left(\frac{1}{1 - x^2}\right)$
61. $f(x) = \operatorname{arcsec}(\sqrt{x})$
62. $f(x) = \sinh(2x - 1)$
63. $f(t) = t^2 \operatorname{arccsc}(2t + 3)$
64. $f(t) = \ln[\cosh(t^2 - 1)]$
65. $f(x) = \frac{\ln(\sinh x)}{x}$
66. $f(t) = \operatorname{tgh}(4t^2 - 3)^2$
67. $f(t) = [\operatorname{cotgh}(t + 1)^2]^{1/2}$
68. $f(u) = \operatorname{sech}(\ln u)$