Soluciones hoja 9.

1. $f'(x) = 0$

2. $f'(x) = -3$

3. $f'(x) = 0$

4. $f'(x) = -1$

5. $f'(x) = 6x - 5$

6. $f'(x) = \dfrac{1}{2\sqrt{x}}$

7. $f'(x) = \dfrac{1}{\sqrt{2x}} + \dfrac{5}{3\sqrt[3]{(5x)^2}}$

8. $f'(x) = e^x$

9. $f'(x) = -2\operatorname{sen} 2x$

10. $f'(x) = \dfrac{1}{x+1}$

11. $f'(x) = \dfrac{1}{\cos^2(x-1)}$

12. $f'(x) = 30x^4 - 12x^3 + 6x - 1$

13. $f'(x) = \dfrac{-1}{2\sqrt{x^3}}$

14. $f'(x) = \dfrac{\operatorname{sen} x}{\cos^2 x}$

15. $f'(x) = \dfrac{-3}{2} x^{-5/2}$

16. $f'(x) = \cos^2 x - \operatorname{sen}^2 x$

17. $f'() = 2x \ln x + \dfrac{x^2+1}{x}$

18. $f'(x) = \dfrac{-4x}{(x^2-1)^2}$

19. $f'(x) = \dfrac{1 - \ln x}{x^2}$

20. $f'(x) = 5\cos 5x$

21. $f'(x) = 5\operatorname{sen}^4 x \cos x$

22. $f'(x) = \cos(x^5) \cdot 5x^4$

23. $f'(x) = e^x + xe^x$

24. $f'(x) = -sen(2x^2 + x) \cdot (4x + 1)$

25. $f'(x) = \dfrac{2\cos 2x(1 + \cos^2 x) + 2\cos x \operatorname{sen} x \cdot \operatorname{sen} 2x}{\left(1 + \cos^2 x\right)^2}$

26. $f'(x) = (3x^2 - 6x + 3)e^{x^3 - 3x^2 + 3x - 1}$

27. $f'(x) = \dfrac{2x^3}{x^4 - 1}$

28. $f'(x) = \dfrac{2\cos 2x\sqrt{x} - \dfrac{\operatorname{sen} 2x}{2\sqrt{x}}}{x} = \dfrac{4x\cos 2x - \operatorname{sen} 2x}{2x\sqrt{x}}$

29. $f'(x) = \dfrac{-1}{x^2}\ln(x-2) - \dfrac{1}{x} \cdot \dfrac{1}{x-2}$

30. $f'(x) = \dfrac{-x^4 + 6x^3 - 10x^2 + 4x + 2}{(x^3 - 4x + 2)^2}$

31. $f'(x) = (2x^2 - 7x + 3)e^{-x}$ (simplificado)

32. $f'(x) = \dfrac{1}{x \cdot \ln x}$

33. $f'(x) = \dfrac{-1}{(1-x)(1+x)}$

34. $f'(x) = \dfrac{-2e^x}{(1-e^x)(1+e^x)}$

35. $f'(x) = 5\ln^4(3x) \cdot \dfrac{1}{x}$

36. $f'(x) = \ln x$

37. $f'(x) = -sen\left(\dfrac{x+1}{x-1}\right) \cdot \dfrac{-2}{(x-1)^2}$

38. $f'(x) = 2x\ln(2x-1) + \dfrac{2x^2}{2x-1}$

39. $f'(x) = \dfrac{-x+7}{(x+3)^3}$ después de simplificar.

40. $f'(x) = \dfrac{2}{(x+2)^2} \cdot \left(\dfrac{3x}{x+2}\right)^{-2/3}$

41. $f'(x) = \cos(\cos x^3)\cdot(-sen x^3)\cdot 3x^2$

42. $f'(x) = 15x^2 - 20x + 1$

43. $f'(x) = 9x^2 + \frac{4}{3}x - 1 + \frac{1}{\sqrt[3]{x^2}}$

44. $f'(x) = \frac{2x+2}{x^2+2x-1}$

45. $f'(x) = \frac{1}{2\sqrt{\frac{senx}{x}}}\cdot\frac{x\cos x - sen}{x^2}$

46. $f'(x) = \frac{2}{\cos^2(2x)}$

47. $f'(x) = \frac{2tgx}{\cos^2 x}$

48. $f'(x) = \frac{2}{\cos^2 x}$

49. $f'(x) = \frac{2x}{\cos^2(x^2)}$

50. $f'(x) = -sen\left(e^{3x+5}\right)\cdot e^{3x+5}\cdot 3$

51. $f'(x) = \frac{\frac{6x+2xe^{x^2}}{3x^2+e^{x^2}}\cdot x - \ln\left(3x^2+e^{x^2}\right)}{x^2}$

52. $f'(x) = \frac{4\cos(3x)}{\sqrt[3]{16sen^2(3x)}}$

53. $f'(x) = \frac{3\cos(3x)}{sen(3x)}\cdot tgx + \ln\left(sen(3x)\right)\cdot\frac{1}{\cos^2 x}$

54. $f'(x) = \frac{12x^2\cdot\ln x - 4x^2}{(\ln x)^2}$

55. $f'(x) = x^2 - 4x + \frac{4}{5}$

56. $f'(x) = \frac{3}{2x\ln 10}$

57. $f'(x) = (2x-5)e^{senx} + (x^2 - 5x + 1)e^{senx}\cdot\cos x$

58. $f'(x) = \frac{\frac{1}{\ln x}\cdot\frac{1}{x}\cdot\cos x + senx\cdot\ln(\ln x)}{\cos^2 x}$

59. $f'(x) = \cos\left(\ln\sqrt{x}\right)\cdot\frac{1}{2x}$

60. $f'(x) = -3\cos^2\left(4^x+5\right)\cdot sen(4^x+5)\cdot 4^x\ln 4$

61. $f'(x) = \frac{\ln x - 1}{(\ln x)^2}$

62. $f'(x) = sen(\cos x)\cdot senx$