Hallar las derivadas de las siguientes funciones:

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

2. $f(x) = (6x^5 + 4)^3$

3. $f(x) = (x^2 + 8)^3 + (x - 4)^2 + 6x - 5$

4. $f(x) = (x^6 + 6x^4 + 3x^2 - 1)^3$

5. $f(x) = \dfrac{1}{(x+8)^2}$

6. $f(x) = \dfrac{1}{(x^6 + 8)^3}$

7. $f(x) = \dfrac{3x^6 + 8}{(5x - 4)^4}$

8. $f(x) = \dfrac{2}{x+1}$

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

10. $f(x) = \dfrac{x}{(x^2 + 1)^2}$

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

12. $f(x) = \dfrac{\sqrt{2}}{x^7}$

13. $f(x) = \sqrt{x+1} \cdot (x-1)$

14. $f(x) = \sqrt{x+1} \cdot (x^2 + 1)$

15. $f(x) = tg(1 - x^2)$

16. $f(x) = x \cdot \cos^3 x$

17. $f(x) = \dfrac{3x^2 - 2x}{(x-2)^2}$

18. $f(x) = tg(1 + 2x^2)$

19. $f(x) = \cos^3(x^2)$

20. $f(x) = \dfrac{2x}{x^2 + 1}$

21. $f(x) = \dfrac{1}{3x^2 + 2}$

22. $f(x) = \dfrac{senx + 2}{x^2}$

23. $f(x) = x^4 \cdot (1 - x^3)^2$

24. $f(x) = \sqrt{x} + \dfrac{1}{\sqrt{x}} - 2$

25. $f(x) = \dfrac{x^3 + x}{x^5 - 1}$

26. $f(x) = \dfrac{x^3}{(1 + x^2)}$

27. $f(x) = (x - 2) \cdot (x + 2) - 3x(x^2 + 1)$

28. $f(x) = \dfrac{x^4}{(1 + x^2)^2}$

29. $f(x) = e^{x^2 + 1}$

30. $f(x) = e^{3x+2}$

31. $f(x) = (\ln x)^2$

32. $f(x) = \ln(x^2 + 1)$

33. $f(x) = senx \cdot (\cos x)^2$

34. $f(x) = x \cdot e^x$

35. $f(x) = x^2 \cdot \ln(x^2 + 1)$

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

37. $f(x) = \ln \sqrt[3]{\dfrac{3x}{x+2}}$

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

39. $f(x) = \ln \sqrt{\dfrac{1-x}{1+x}}$

40. $f(x) = sen^2 \, x^3$