Határozza meg az alábbi függvények deriváltját!

1, $f(x)=(2x+1)^7$

2, $f(x)=\sqrt{x^2-4}$

3, $f(x)=\log_2(x^2-5x+6)$

4, $f(x)=\ln(x^2+2)$

5, $f(x)=e^{x^2+3x+6}$

6, $f(x)=\sqrt{x^2+5x+6}$

7, $f(x)=\sqrt{1+e^x}$

8, $f(x)=\ln(1-\sqrt{x})$

9, $f(x)=\ln(1-3x^2)$

10, $f(x)=e^{x^2}+\ln 7x$

11, $f(x)=\sqrt{2-5x^2}$

12, $f(x)=(x^2+3)\cdot\log_5(4x-2)$

13, $f(x)=\sqrt{2+5x^3}-e^{x^2+3}-\ln(9x-1)$

14, $f(x)=e^{7x}\cdot\lg 5x$

15, $f(x)=\ln\sqrt{x^2-2}$

16, $f(x)=(x^2+5x-3)^9$

17, $f(x)=\lg(2x+4)$

18, $f(x)=\ln(3x)$

19, $f(x)=e^{5x}$

20, $f(x)=\sqrt{1-4x^2}$

21, $f(x)=\dfrac{1+e^{2x}}{1-e^{2x}}$

22, $f(x)=\left(\dfrac{1+x}{1-x}\right)^2$

23, $f(x)=\dfrac{1-\sqrt{x}}{1+\sqrt{x}}$

24, $f(x)=\dfrac{e^{3x}}{2+e^{3x}}$

25, $f(x)=4x^2+e^{2x}+\ln 2x$

26, $f(x)=10^{2x}-(x^2+7)^3$

27, $f(x)=\ln^2(x^2+1)$

28, $y=(x^2+4)^2$

29, $y=(x^3+13)^5$

30, $y=\sqrt{4x^2-6x+9}$

31, $y=\sqrt{x^5+5x^3}$

32, $y=\dfrac{1}{3x^8+2x-x^{-3}}$

33, $y=\dfrac{3{,}5x^{-\frac{4}{3}}}{\sqrt{4x^2-6x+9}}$

34, $y=\sqrt{x}(x^3+3x)$

35, $y=xe^x$

36, $y=\dfrac{x^2-4}{x+7}$

37, $y=\sqrt{x}(x^3+3x)$

38, $y=\dfrac{x^2-49}{x+1}$

39, $y=\ln(x^2)$

40, $y=e^{\sin x}$

41, $y=x\sin x$

42, $y=\sqrt{x}e^x$

43, $y = e^x (x^3 + 3x)^5$ **44,** $y = e^{x^2+19x+49}$

45, $f(x) = 6x^2 + \frac{3}{\sqrt[4]{x}} - \frac{x^2}{\sqrt[3]{x}} + \log_5 8 - 2\log_3 x$

46, $g(x) = \frac{\sin x}{4x^3 - 6}$ **47,** $h(x) = e^x \cdot \ln x$ **48,** $i(x) = \frac{2\cos(x^3 + 2x)}{x^2 + 6x + 3}$

49, $j(x) = \sin\sqrt{10x^4 + 3x^2}$

50, $f_{1(x)} = x \cdot \sin x$, ***51,*** $f(x) = x \cdot \sin 3x$, **52,** $f_3(x) = \frac{\sin x}{2x^4 + 3}$,

53, $f_4(x) = \sqrt{\sin x + 3}$, **54,** $f_5 := x^4 \cdot \sin 5x$, **55,** $f_6(x) = x^3 \cdot \sqrt[4]{x^3} \cdot \sin x$,

56, $f_7(x) = \left(x^5 + \pi\right)^3 \cdot \sin 3x$, **57,** $f_8 = \frac{x \cdot \cos 6x}{x^2 - 1}$.

58, $f_{9(x)} = \frac{x^3 \cdot \cos x^3}{\sin^3 x + 6}$, **59,** $f_{11} = x^3 \cos 4x + \frac{1}{x^2 + 1}$,

60, $f_{12}(x) = \sin 2x \cdot tgx \quad (x \in \left]-\frac{\pi}{2}, \frac{\pi}{2}\right[)$,

61, $f_{13}(x) := tg^3 x + ctgx^3 + 3x - \sqrt[3]{x} \_ \frac{3}{x^3} \quad (x \in \left]0, \sqrt[3]{\frac{\pi}{2}}\right[)$,

62, $f_{14}(x) := \frac{\sin 3x}{x^4 + \sqrt{2}} + \cos^5(2x + 1)$,

63, $f_{15}(x) := \frac{\operatorname{arctg} 2x^4}{\cos^2 x + 5}$,

64 $f(x) := \operatorname{arctg} 2x^4 \cdot \left(\cos^2 x + 5\right)$.

65, $f(x) = \frac{1}{\sqrt[3]{x^2}} + \sqrt{x}$ **66,** $f(x) = \left(1 - x^3\right) \cdot \left(x^2 - 2x\right)$

67, $f(x) = \frac{2x^2 + 3x}{1 + 2x}$ **68,** $f(x) = \sin^2 x - \sin x^2$

69, $f(x) = x^2 \cdot ctg\sqrt{x}$ **70,** $f(x) = e^{-x} \cdot \cos 2x$

71, $f(x) = \operatorname{tg}^2 \sqrt{x} + \frac{1}{\cos \pi}$ **72,** $f(x) = e^{\operatorname{arsh}\left(\frac{x}{2} + 3\right)}$

73, $f(x) = ctg \frac{x}{x^2 + 1}$ **74,** $f(x) = \ln\left(x + \sqrt{x^2 - 1}\right)$

75, $f(x) = \ln(ch\sqrt{x})$ **76,** $f(x) = \operatorname{th}\left(\frac{\cos^2 2x}{x^2 - 1}\right)$

77, $f(x) = sh\left(\sqrt{x} \cdot e^{-x}\right)$ **78,** $f(x) = \sin^2(\arccos x)$

79, $f(x) = \log_2\left(\sqrt[3]{x^2} \cdot \operatorname{sh} x\right) + e^3$