

Вычислить производные.

1. $y = \left(\ln(1 + \sqrt[3]{1+x^2}) \right)^2$

2. $y = \sqrt[3]{\arcsin\left(\operatorname{tg}\left(\frac{\pi}{4} - \frac{x}{2}\right)\right)}$

3. $y = \arctg \frac{1 - \sqrt{x+3}}{2 + \sqrt[3]{x-6}} - \sqrt{1-2x^2}$

4. $y = \frac{10 \cos^3 4x}{\sin \sqrt{3} \cdot (x^2 - (\pi^2 / 4))} + \frac{2}{\sin x}$

5. $y = \sqrt[4]{\operatorname{ctg} 5x}$

6. $\sin(xy^2) - e^{x^2} = \ln\left(\frac{2x}{y}\right)$

7.
$$\begin{cases} x = \frac{t^3}{1-t^2} \\ y = \operatorname{ctg}^2 t \end{cases}$$