

PODSTAWOWE POCHODNE



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POCHODNE

$$C; C \in \mathbb{R}$$



POCHODNE

$$x^k; k \in \mathbb{R}, x \in \begin{cases} \mathbb{R} \\ \mathbb{R} \setminus \{0\} \\ \mathbb{R}^+ \cup \{0\} \\ \mathbb{R}^+ \end{cases}$$



POCHODNE

$$x; x \in \mathbb{R}$$



POCHODNE

$$x^{-1}; x \in \mathbb{R} \setminus \{0\}$$



POCHODNE

$$\sqrt{x}; x \in \mathbb{R}^+ \cup \{0\}$$



POCHODNE

$$\sqrt[3]{x}; x \in \mathbb{R}$$



POCHODNE

$$x^{-\frac{1}{4}}; x \in \mathbb{R}^+$$



POCHODNE

$$a^x; a > 0, x \in \mathbb{R}$$



POCHODNE

$$e^x; x \in \mathbb{R}$$



$$(C)' = 0$$



$$(x)' = 1$$

$$(x^k)' = kx^{k-1}$$

$$(\sqrt{x})' = \frac{1}{2\sqrt{x}} = \frac{1}{2}x^{-\frac{1}{2}}$$

$$\left(\frac{1}{x}\right)' = (x^{-1})' = -\frac{1}{x^2} = -x^{-2}$$

$$\left(\frac{1}{\sqrt[4]{x}}\right)' = (x^{-\frac{1}{4}})' = -\frac{1}{4}x^{-\frac{5}{4}} = -\frac{1}{4\sqrt[4]{x^5}}$$

$$(\sqrt[3]{x})' = \frac{1}{3\sqrt[3]{x^2}} = \frac{1}{3}x^{-\frac{2}{3}}$$

$$(e^x)' = e^x$$

$$(a^x)' = a^x \ln a$$

POCHODNE

$$\log_a X; a > 0, a \neq 1, x \in \mathbb{R}^+$$



POCHODNE

$$\ln x; x \in \mathbb{R}^+$$



POCHODNE

$$\sin x; x \in \mathbb{R}$$



POCHODNE

$$\cos x; x \in \mathbb{R}$$



POCHODNE

$$\operatorname{tg} x; x \neq k\frac{\pi}{2}, k \in \mathbb{Z}$$



POCHODNE

$$\operatorname{ctg} x; x \neq k\pi, k \in \mathbb{Z}$$



POCHODNE

$$\arcsin x; x \in [-1, 1]$$



POCHODNE

$$\arccos x; x \in [-1, 1]$$



POCHODNE

$$\operatorname{arctg} x; x \in \mathbb{R}$$



POCHODNE

$$\operatorname{arcctg} x; x \in \mathbb{R}$$



$$(\ln x)' = \frac{1}{x}$$

$$(\log_a x)' = \frac{1}{x \ln a}$$

$$(\cos x)' = -\sin x$$

$$(\sin x)' = \cos x$$

$$(\operatorname{ctg} x)' = -\frac{1}{\sin^2 x}$$

$$(\operatorname{tg} x)' = \frac{1}{\cos^2 x}$$

$$(\arccos x)' = -\frac{1}{\sqrt{1-x^2}}$$

$$(\arcsin x)' = \frac{1}{\sqrt{1-x^2}}$$

$$(\operatorname{arcctg} x)' = -\frac{1}{1+x^2}$$

$$(\operatorname{arctg} x)' = \frac{1}{1+x^2}$$