

Таблица производных

$$C' = 0$$

$$(x^n)' = nx^{n-1}$$

$$(x^2)' = 2x$$

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

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

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

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

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

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

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

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

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

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

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

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

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

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

Таблица дифференциалов I

$$df(x) = f'(x)dx$$

$$dC = 0dx$$

$$dx^n = nx^{n-1}dx$$

$$d(x^2) = 2x dx$$

$$d(\sqrt{x}) = \frac{dx}{2\sqrt{x}}$$

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

$$d(e^x) = e^x dx$$

$$d(a^x) = a^x \ln a dx$$

$$d(\ln x) = \frac{dx}{x}$$

$$d(\log_a x) = \frac{dx}{x \ln a}$$

$$d(\sin x) = \cos x dx$$

$$d(\cos x) = -\sin x dx$$

$$d(\operatorname{tg} x) = \frac{dx}{\cos^2 x}$$

$$d(\operatorname{ctg} x) = -\frac{dx}{\sin^2 x}$$

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

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

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

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