

Формулы Тейлора в окрестности нуля

$$e^x = 1 + x + \frac{x^2}{2!} + \frac{x^3}{3!} + \dots + \frac{x^n}{n!} + \dots$$

$$\operatorname{sh}x = x + \frac{x^3}{3!} + \frac{x^5}{5!} + \dots + \frac{x^{2n-1}}{(2n-1)!} + \dots$$

$$\operatorname{ch}x = 1 + \frac{x^2}{2!} + \frac{x^4}{4!} + \dots + \frac{x^{2n}}{(2n)!} + \dots$$

$$\sin x = x - \frac{x^3}{3!} + \frac{x^5}{5!} + \dots + (-1)^{n-1} \frac{x^{2n-1}}{(2n-1)!} + \dots$$

$$\cos x = 1 - \frac{x^2}{2!} + \frac{x^4}{4!} + \dots + (-1)^{n-1} \frac{x^{2n-2}}{(2n-2)!} + \dots$$

$$(1+x)^m = 1 + \frac{m}{1!}x + \frac{m(m-1)}{2!}x^2 + \frac{m(m-1)(m-2)}{3!}x^3 + \dots$$

$$\frac{1}{1+x} = 1 - x + x^2 - x^3 + \dots + (-1)^{n-1}x^n + \dots$$

$$\ln(1+x) = x - \frac{x^2}{2} + \frac{x^3}{3} - \dots + (-1)^{n-1} \frac{x^n}{n} + \dots$$

$$\operatorname{arctg}x = x - \frac{x^3}{3} + \frac{x^5}{5} - \dots + (-1)^{n-1} \frac{x^{2n-1}}{(2n-1)} + \dots$$

$$\arcsin x = x + \frac{1}{2} \frac{x^3}{3} + \frac{1 \cdot 3}{2^2 2!} \frac{x^5}{5} + \frac{1 \cdot 3 \cdot 5}{2^3 3!} \frac{x^7}{7} + \dots$$

$$\operatorname{tg}x = x + \frac{1}{3}x^3 + \frac{2}{15}x^5 + \dots + \frac{2n-2}{(2n-1)!}x^{2n-1} + \dots$$