Funkcie – hyperbolické funkcie

Moivreov vzorec $x \in R$, $n \in N$

$$(\cosh x \pm \sinh x)^n = \cosh nx \pm \sinh nx.$$

Vzťahy medzi hyperbolickými funkciami $x > 0$

$$\sinh x = \quad \sinh x \quad = \sqrt{\cosh^2 x - 1} = \frac{\text{tgh}\, x}{\sqrt{1 - \text{tgh}^2 x}} = \frac{1}{\sqrt{\text{cotgh}^2 x - 1}}.$$

$$\cosh x = \sqrt{\sinh^2 x + 1} = \quad \cosh x \quad = \frac{1}{\sqrt{1 - \text{tgh}^2 x}} = \frac{\text{cotgh}\, x}{\sqrt{\text{cotgh}^2 x - 1}}.$$

$$\text{tgh}\, x = \frac{\sinh x}{\sqrt{\sinh^2 x + 1}} = \frac{\sqrt{\cosh^2 x - 1}}{\cosh x} = \quad \text{tgh}\, x \quad = \frac{1}{\text{cotgh}\, x}.$$

$$\text{cotgh}\, x = \frac{\sqrt{\sinh^2 x + 1}}{\sinh x} = \frac{\cosh x}{\sqrt{\cosh^2 x - 1}} = \frac{1}{\text{tgh}\, x} = \quad \text{cotgh}\, x.$$

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$$\cosh x = \sqrt{\sinh^2 x + 1} = \quad \cosh x \quad = \frac{1}{\sqrt{1 - \operatorname{tgh}^2 x}} = \frac{\operatorname{cotgh} x}{\sqrt{\operatorname{cotgh}^2 x - 1}}.$$

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$$\operatorname{cotgh} x = \frac{\sqrt{\sinh^2 x + 1}}{\sinh x} = \frac{\cosh x}{\sqrt{\cosh^2 x - 1}} = \frac{1}{\operatorname{tgh} x} = \quad \operatorname{cotgh} x.$$