

$$\coth^{-1} x = \frac{1}{x^2-1}$$

$$\operatorname{sech}^{-1} x = \frac{1}{x\sqrt{1-x^2}}$$

$$\operatorname{cosech}^{-1} x = \frac{1}{x\sqrt{x^2+1}}$$

Torthaí agus Líonta:

Products and Quotients:

$$y = uv; \frac{dy}{dx} = u \frac{dv}{dx} + v \frac{du}{dx}$$

$$y = \frac{u}{v}; \frac{dy}{dx} = \frac{v \frac{du}{dx} - u \frac{dv}{dx}}{v^2}$$

$$\begin{aligned} \sinh x \\ \cosh x \\ \tanh x \\ \coth x \\ \operatorname{sech} x \end{aligned}$$

$$\begin{aligned} \cosh x \\ \sinh x \\ \ln \cosh x \\ \ln |\sinh x| \\ \tan^{-1}(\sinh x) \end{aligned}$$

$$\operatorname{cosech} x$$

$$\ln \left| \tanh \frac{x}{2} \right|$$

$$\cos^2 x$$

$$\frac{1}{2}[x + \frac{1}{2} \sin 2x]$$

$$\sin^2 x$$

$$\frac{1}{2}[x - \frac{1}{2} \sin 2x]$$

$$\cosh^2 x$$

$$\frac{1}{2}[x + \frac{1}{2} \sinh 2x]$$

$$\sinh^2 x$$

$$\frac{1}{2}[-x + \frac{1}{2} \sinh 2x]$$

$$\frac{1}{x\sqrt{a^2-x^2}}$$

$$= \frac{1}{a} \operatorname{sech}^{-1} \frac{x}{a}$$

$$\frac{1}{x\sqrt{x^2+a^2}}$$

$$= \frac{1}{a} \operatorname{cosech}^{-1} \frac{x}{a}$$