

$$\mathbb{R} \xrightarrow{\text{diff}} -\frac{\pi}{2} \Big| \frac{\pi}{2}$$

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

$$1 + \frac{y^2}{c^2} = 1 + \frac{y^2 \mathfrak{s}^2}{y^2 \mathfrak{c}^2} = \frac{y^2 \mathfrak{c}^2 + y^2 \mathfrak{s}^2}{y^2 \mathfrak{c}^2} = \frac{1}{y^2 \mathfrak{c}^2} = \frac{y}{\mathfrak{c}^2}$$

$$1 = \frac{y}{\mathfrak{c}^2} \mathfrak{c}^2 = \frac{y}{\mathfrak{c}^2} \underbrace{\mathfrak{c}^2}_{1+x^2} = \frac{y}{\mathfrak{c}^2} (1+x^2)$$