

$$\lim_{x \rightarrow \infty} \frac{x}{\sqrt{x^2 + 1} - 1} = \lim_{x \rightarrow \infty} \frac{1}{\frac{1}{x}\sqrt{x^2 + 1} - \frac{1}{x}}$$

分母・分子を $\frac{1}{x}$ 倍

$$= \lim_{x \rightarrow \infty} \frac{1}{\sqrt{1 + \frac{1}{x^2}} - \frac{1}{x}}$$

$$= 1$$