

We Love Math

4.4

71. $\lim_{x \rightarrow \infty} \frac{x}{\sqrt{x^2+1}}$

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

$\lim_{x \rightarrow \infty} \frac{1}{\frac{1}{2}(x^2+1)^{-1/2} (2x)}$
↑ Doesn't work ↑

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

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

$\lim_{x \rightarrow \infty} \frac{1}{1} = 1$

Quotient Rule

$\frac{d}{dx} \left(\frac{u}{v} \right) = \frac{u'v - v'u}{(v^2)^2}$

$\frac{\sqrt{x^2+1} (1) - x \left[\frac{1}{2}(x^2+1)^{-1/2} (2x) \right]}{(x^2+1)^2}$

$\frac{\sqrt{x^2+1} - x \left[\frac{1}{2}(x^2+1)^{-1/2} (2x) \right]}{(x^2+1)^2}$

↑ Doesn't work ↑

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