

$$\frac{x^2+1}{x+1} \left( -\frac{2x-2}{x^2+3x+1} \right) \log \left( 1 - \frac{2x-2}{x^2+3x+1} \right)$$

$$= \lim_{x \rightarrow +\infty} e^{\frac{2x-2}{x^2+3x+1}}$$

$$= \frac{2x-2}{x^2+3x+1}$$

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$$= e^{-\frac{1}{2}} = \frac{1}{\sqrt{e}}$$

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$$\lim_{x \rightarrow +\infty} \left( \frac{x \log x + x + 3}{x \log x + 2} \right)^{\frac{x \log x + 1}{2x + 5}}$$

=

$$= \lim_{x \rightarrow +\infty} e^{\frac{x \log x + 1}{2x + 5} \log \left( \frac{x \log x + x + 3}{x \log x + 2} \right)}$$

$$= \lim_{x \rightarrow +\infty} e^{\frac{x \log x + 1}{2x + 5} \log \left[ 1 + \left( \frac{x \log x + x + 3}{x \log x + 2} - 1 \right) \right]}$$

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$$\lim_{x \rightarrow +\infty} e^{\frac{x \log x + 1}{2x + 5} \log \left[ 1 + \frac{x \log x + x + 3}{x \log x + 2} \right]}$$

$\lim_{x \rightarrow +\infty} e$

$$\frac{x \log x + 1}{2x + 5} \log \left[ 1 + \frac{x - 1}{x \log x + 2} \right]$$

$\lim_{x \rightarrow +\infty} e$

$$\frac{x \log x + 1}{2x + 5} \cdot \frac{x - 1}{x \log x + 2} \log \left( 1 + \frac{x - 1}{x \log x + 2} \right)$$

$\lim_{x \rightarrow +\infty} e$

$$\frac{x^2 \log x \left( 1 + \frac{1}{x \log x} \right) \left( 1 - \frac{1}{x} \right)}{x^2 \log x \left( 2 + \frac{1}{x} \right) \left( 1 + \frac{2}{x \log x} \right)} \log$$

$= \lim_{x \rightarrow +\infty} e$

$x \rightarrow +\infty$

$$\frac{1}{2}$$

$= e$

$$\frac{-x \log x - 2}{x \log x + 2}$$

$$\left( 1 + \frac{x - 1}{x \log x + 2} \right)$$

$$\frac{x - 1}{x \log x + 2}$$

$$\left( \frac{x}{x \log x + 2} + \frac{1}{x \log x + 2} \right) \log$$