

8.3

$$\textcircled{29} \lim_{x \rightarrow \infty} \frac{e^x}{x^x} = \lim_{x \rightarrow \infty} \left(\frac{e}{x}\right)^x = 0$$

$x^x > e^x$

$$2^x$$

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

$$\lim_{x \rightarrow \infty} \frac{e^x}{(\ln x)^x} = \lim_{x \rightarrow \infty} \left(\frac{e}{\ln x}\right)^x = 0$$

$$(\ln x)^x > e^x > e^{x/2}$$

$$\lim_{x \rightarrow \infty} \frac{x^x \textcircled{3}}{(\ln x)^x} = \lim_{x \rightarrow \infty} \left(\frac{x}{\ln x}\right)^x = \infty$$

$\textcircled{1} x^x > (\ln x)^x \textcircled{2}$

$\textcircled{4}$

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