

Use L'Hôpital's rule to find the following limits:

1. $\lim_{x \rightarrow 1} \frac{\ln(x)}{\sin(\pi x)}$

2. $\lim_{x \rightarrow 0} \frac{e^{3x} - 1}{x}$

3. $\lim_{x \rightarrow 0} \frac{1 - \cos(x)}{x^2}$

4. $\lim_{x \rightarrow \infty} \left(1 - \frac{2}{x}\right)^x$