

## L'Hôpital's Rule — Differences, Products, and Powers

For each limit, classify the form: write the indeterminate type or write “determinate”. Then evaluate the limit.

1.  $\lim_{x \rightarrow 0^+} \frac{1}{x} - \frac{1}{\sin x}$

2.  $\lim_{x \rightarrow \infty} x e^{-x}$

3.  $\lim_{x \rightarrow 0^+} \sqrt{x} \ln x$

4.  $\lim_{x \rightarrow 0^+} x^x$

5.  $\lim_{x \rightarrow 0^+} (1 + \sin x)^{1/x}$