

## Limits at Infinity of $\frac{e^x}{x}$ and $\frac{x}{e^x}$

As  $x$  approaches infinity, the rational expressions  $\frac{e^x}{x}$  and  $\frac{x}{e^x}$  take on the form  $\frac{\infty}{\infty}$ . Use the extended version of l'Hopital's rule to evaluate the following limits, if they exist.

a)  $\lim_{x \rightarrow +\infty} \frac{e^x}{x}$

b)  $\lim_{x \rightarrow +\infty} \frac{x}{e^x}$

MIT OpenCourseWare  
<http://ocw.mit.edu>

18.01SC Single Variable Calculus  
Fall 2010

For information about citing these materials or our Terms of Use, visit: <http://ocw.mit.edu/terms>.