

Section 4 Quiz

Evaluate the following limits.

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

Solution:

Notice that if you take this limit you get $\frac{2}{0}$. So, $\lim_{x \rightarrow 0^+} \frac{1 + \cos(x)}{x^2} = \infty$.

2.) $\lim_{x \rightarrow \infty} \frac{e^x}{\ln(x)}$

Solution:

$$\lim_{x \rightarrow \infty} \frac{e^x}{\ln(x)} = \lim_{x \rightarrow \infty} \frac{\frac{d}{dx} e^x}{\frac{d}{dx} \ln(x)} = \lim_{x \rightarrow \infty} \frac{e^x}{\frac{1}{x}} = \lim_{x \rightarrow \infty} e^x x = \infty$$