L'Hospital's Rule §4.4

1. Let $f(x) = \dfrac{e^x}{2x}$.

   (a) Consider $\lim_{x \to \infty} f(x)$. What, if any, indeterminate type is this?

   (b) Evaluate the limit by either using chapter 2 methods or L'Hospital's Rule.

2. Let $f(x) = \dfrac{\sin x}{1 - \cos x}$.

   (a) Consider $\lim_{x \to \pi^-} f(x)$. What, if any, indeterminate type is this?

   (b) Evaluate the limit by either using chapter 2 methods or L'Hospital's Rule.

3. Find $\lim\limits_{x \to 1} \dfrac{x^2 - x}{x^2 - 1}$

4. Find $\lim\limits_{x \to 0} \dfrac{x + \sin(x)}{x + \cos(x)}$

5. Find $\lim\limits_{x \to \infty} x^3 e^{-x^2}$