Calculus 5.5 Key Points

l'Hôpital's Rule:

If the limit $\lim_{x \to a} \frac{f(x)}{g(x)} = \frac{0}{0}$ or $\lim_{x \to a} \frac{f(x)}{g(x)} = \frac{\infty}{\infty}$, then it is in indeterminate form. Evaluate the limit by replacing $f(x)$ and $g(x)$ with their derivatives as so: $\lim_{x \to a} \frac{f'(x)}{g'(x)}$

In other words, when $\lim_{x \to a} f(x) = \lim_{x \to a} g(x) = 0$, then

$$\lim_{x \to a} \frac{f(x)}{g(x)} = \lim_{x \to a} \frac{f'(x)}{g'(x)}$$