L'Hôpital's Rule

Consider the function

$$f(x) = \frac{g(x)}{h(x)}$$

If $\lim_{x \to a} g(x)$ and $\lim_{x \to a} h(x)$ are both 0 or are both $\pm\infty$, then

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

Handling Other Indeterminant Forms with L'Hôpital's Rule

$\infty - \infty$	Use algebra to convert to 0/0 or $\pm\infty/\pm\infty$
$0 \cdot \infty$	Use algebra to convert to 0/0
1^{∞}	Transform using logs
0^{0}	Transform using logs
∞^{0}	Transform using logs

- Note that the following are not indeterminant:
  - $\infty + \infty$
  - $\infty \cdot \infty$
  - ∞^{∞}
  - 0^{∞}