The figure to the right provides an illustration of L'Hôpital's Rule. Recall that this rule can be applied when taking the limit as $x \longrightarrow x_a$ of a ratio of two functions where the ratio approaches the indeterminate form $\frac{0}{0}$; in the case where both functions are differentiable at $x_a$, the ratio approaches the ratio of their derivatives. In the case illustrated both $\sin(x)$ and $x \longrightarrow 0$ as we approach the origin, but the ratio of their derivatives, $\frac{\cos(x)}{1} \longrightarrow 1$. L'Hôpital's Rule also applies in the case of the indeterminate form $\frac{\infty}{\infty}$.