

# Rule of l'Hôpital

Suppose that  $\lim(f(x))$  and  $\lim(g(x))$  are both zero or both  $\pm\infty$ . Then if  $\lim(f'(x)/g'(x))$  has a finite limit or the limit is  $\pm\infty$ , then  $\lim(f(x)/g(x)) = \lim(f'(x)/g'(x))$ .

$$\lim \frac{f(x)}{g(x)} \stackrel{(H)}{=} \lim \frac{f'(x)}{g'(x)} \tag{1}$$

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