$$\left(\frac{f}{g}\right)'(x) = \lim_{h\to 0}\left(\frac{1}{g(x+h)g(x)}\right)\left[\frac{f(x+h)-f(x)}{h}g(x) - \frac{g(x+h)-g(x)}{h}f(x)\right]$$

$$= \frac{f'(x)g(x) - f(x)g'(x)}{g^2(x)}$$