Satz: $f :]a,b[\Rightarrow \mathbb{R}, c \in]a,b[$, so daß $f'(c)$ existiert. Dann ist f auch stetig in c.
Bew: zz:

$$\lim_{x \to c} f(x) = c$$

$$(\lim_{x \to c} \frac{f(x) - f(c)}{x - c} = \lim_{x \to c} = 0 \Rightarrow 0 = \lim_{x \to c} \frac{f(x) - f(c)}{x - c} \cdot (x - c) = \lim_{x \to c} (f(x) - f(c)) \Rightarrow lim f(x) = f(c)$$

$$f'(c) + g(c) = \lim_{x \to c} (\frac{f(x) - f(c)}{h} + \frac{g(y) - g(c)}{h}) = \lim_{x \to c} (\frac{f(x) + g(x) - (f(c) + g(c))}{x - c}) = \lim_{x \to c} \frac{(f + g)(x) - (f + g)(}{x - h}$$