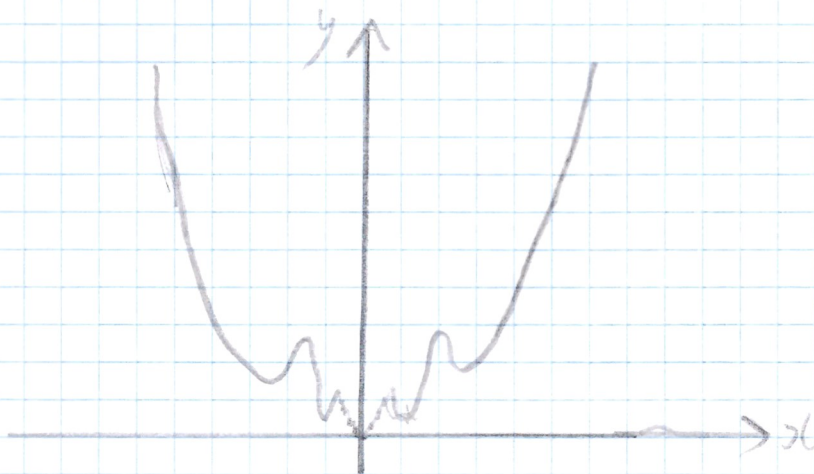


Skizze und Beweis:



1373,

(vermutl. $y = x - h$).

$$\lim_{h \rightarrow 0} \frac{f(x+h) + f(x-h) - 2f(x)}{h^2} = \lim_{h \rightarrow 0} \frac{f(y+2h) - 2f(y+h) + f(y)}{h^2} =$$

$$= \lim_{h \rightarrow 0} \frac{1}{h} \left(\frac{f(y+2h) - f(y+h)}{h} - \frac{f(y+h) - f(y)}{h} \right) =$$

$$= \lim_{h \rightarrow 0} \frac{1}{h} \cdot \left(\lim_{h \rightarrow 0} \frac{f(t+h) - f(t)}{h} - \lim_{h \rightarrow 0} \frac{f(y+h) - f(y)}{h} \right) =$$

$$= \lim_{h \rightarrow 0} \frac{f'(t) - f'(y)}{h} = \lim_{h \rightarrow 0} \frac{f'(y+h) - f'(y)}{h} = f''(y) = f''(x-h) = f''(x)$$

44 mg.