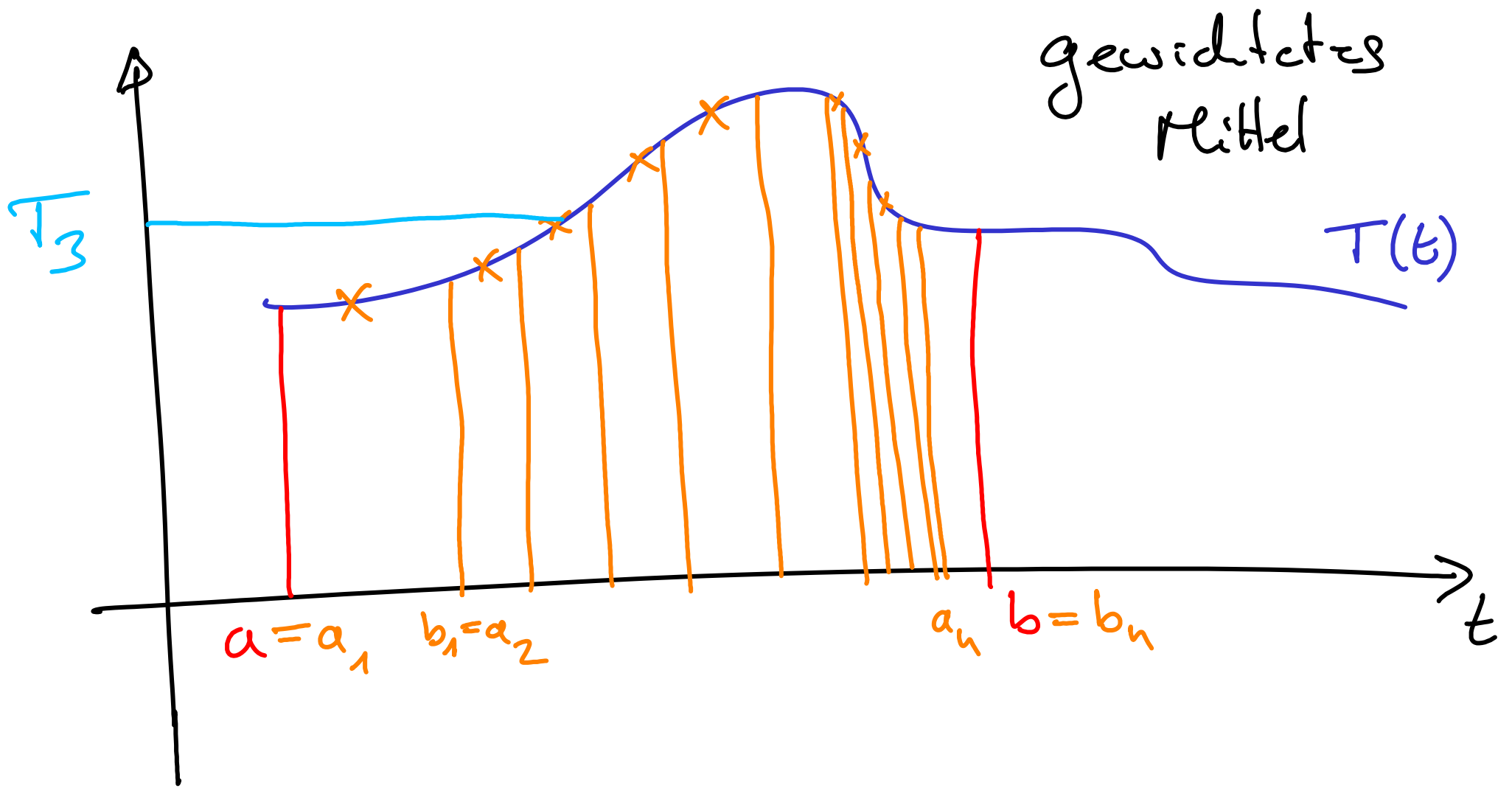
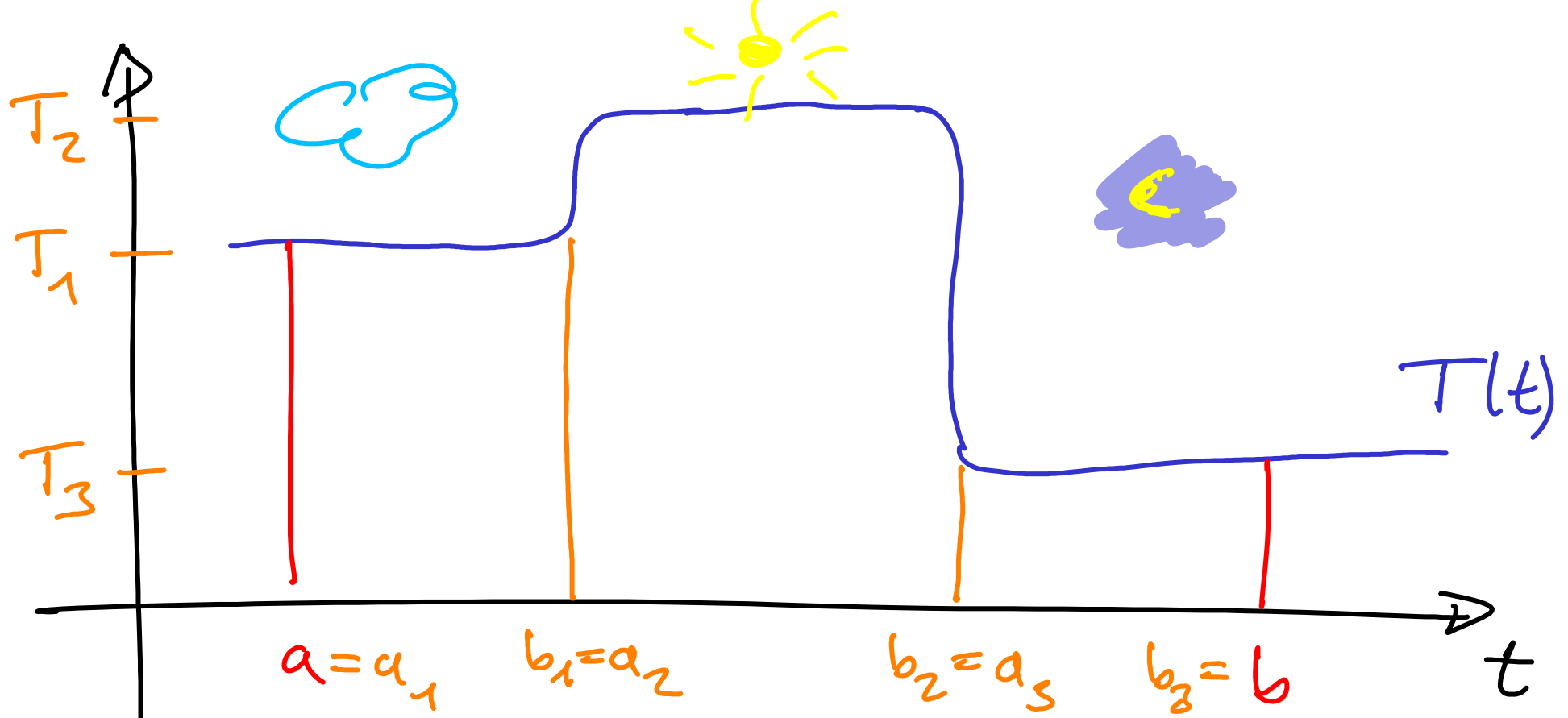


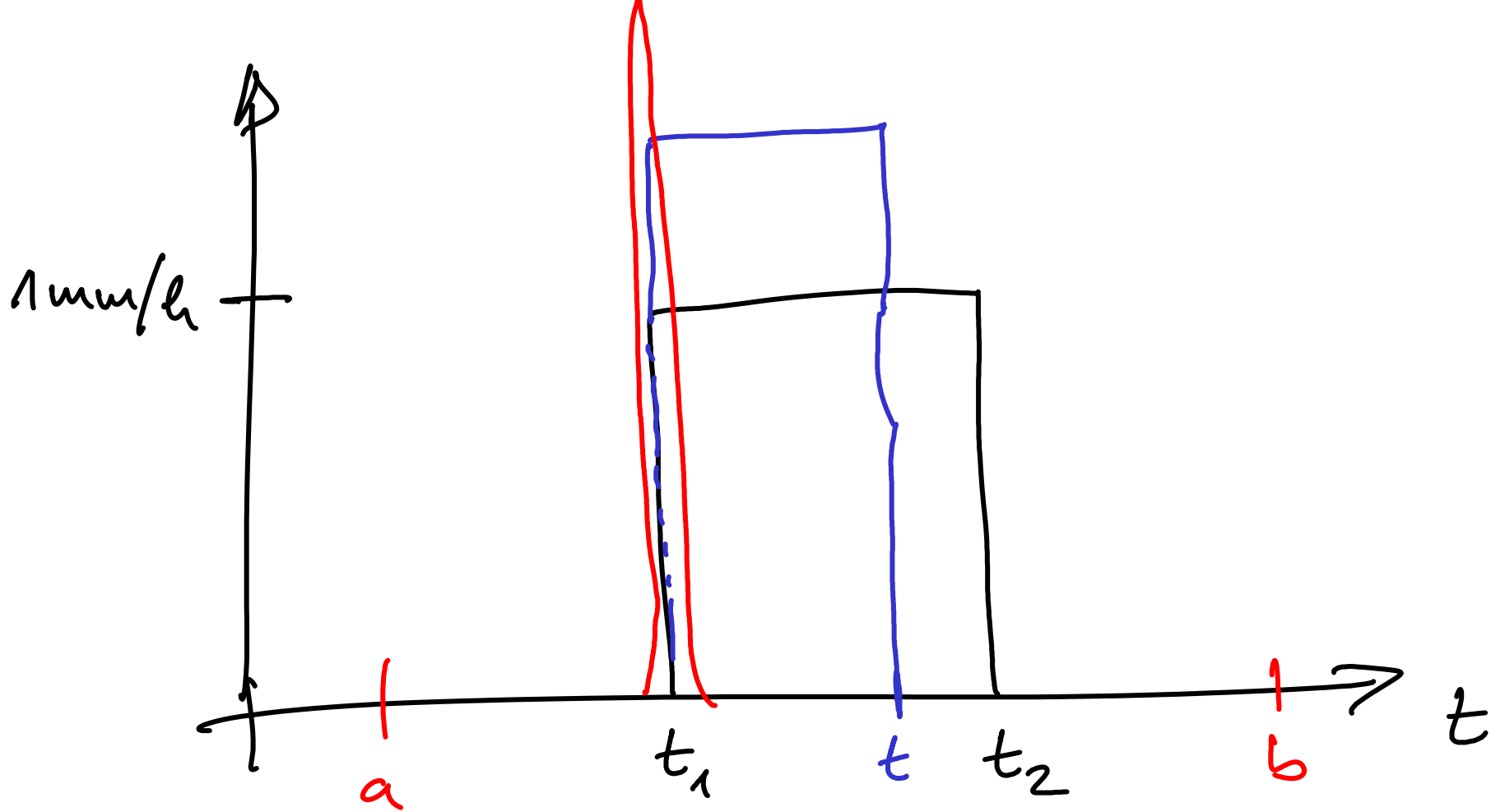
$$\bar{T} = \frac{1}{n} \sum_{i=1}^n T(t_i)$$





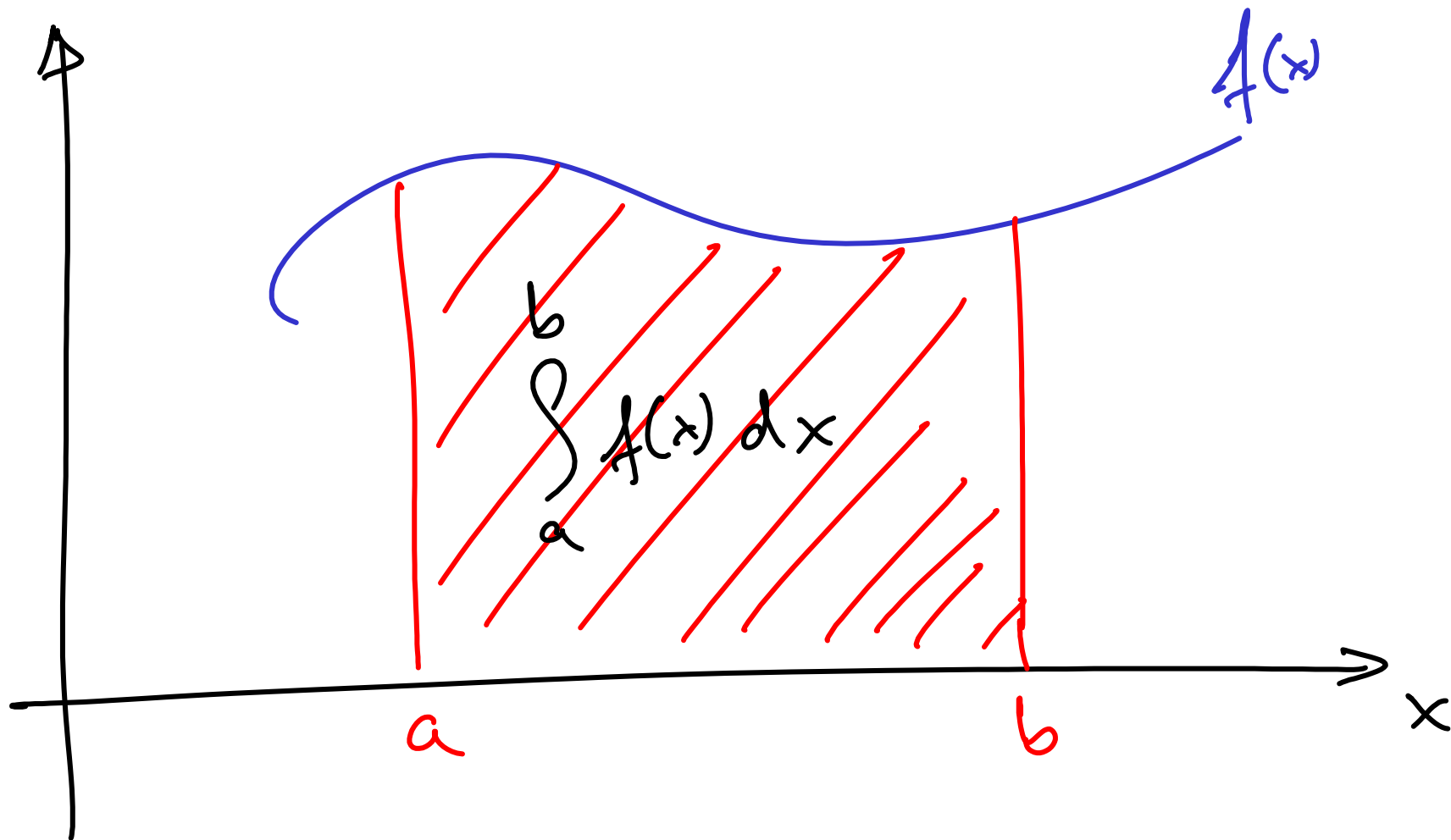
$$\bar{T} = T_1 \frac{b_1 - a_1}{b - a} + T_2 \frac{b_2 - a_2}{b - a} + T_3 \frac{b_3 - a_3}{b - a}$$

gute Näherung für $\frac{1}{b-a} \int_a^b T(t) dt$

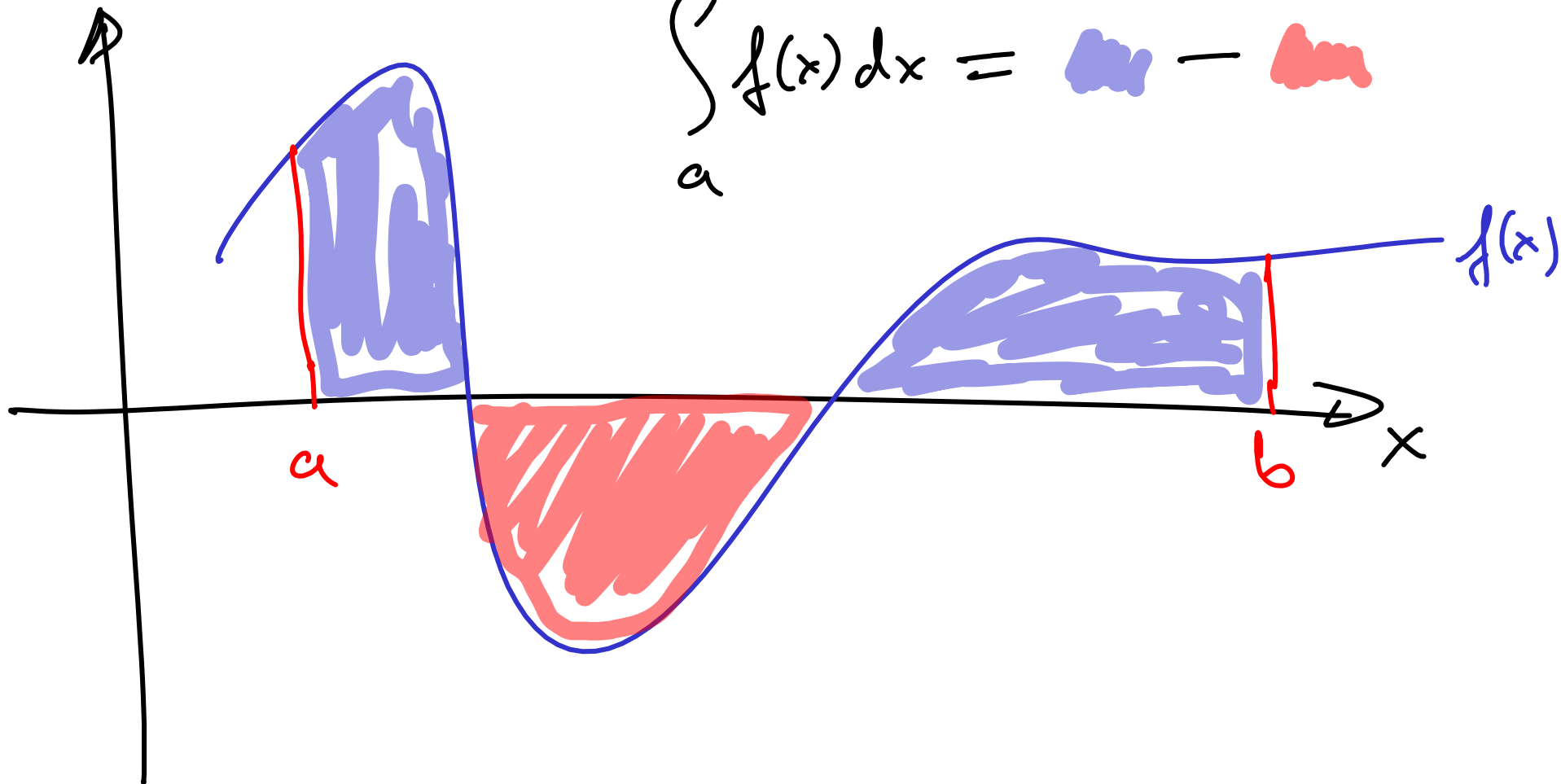


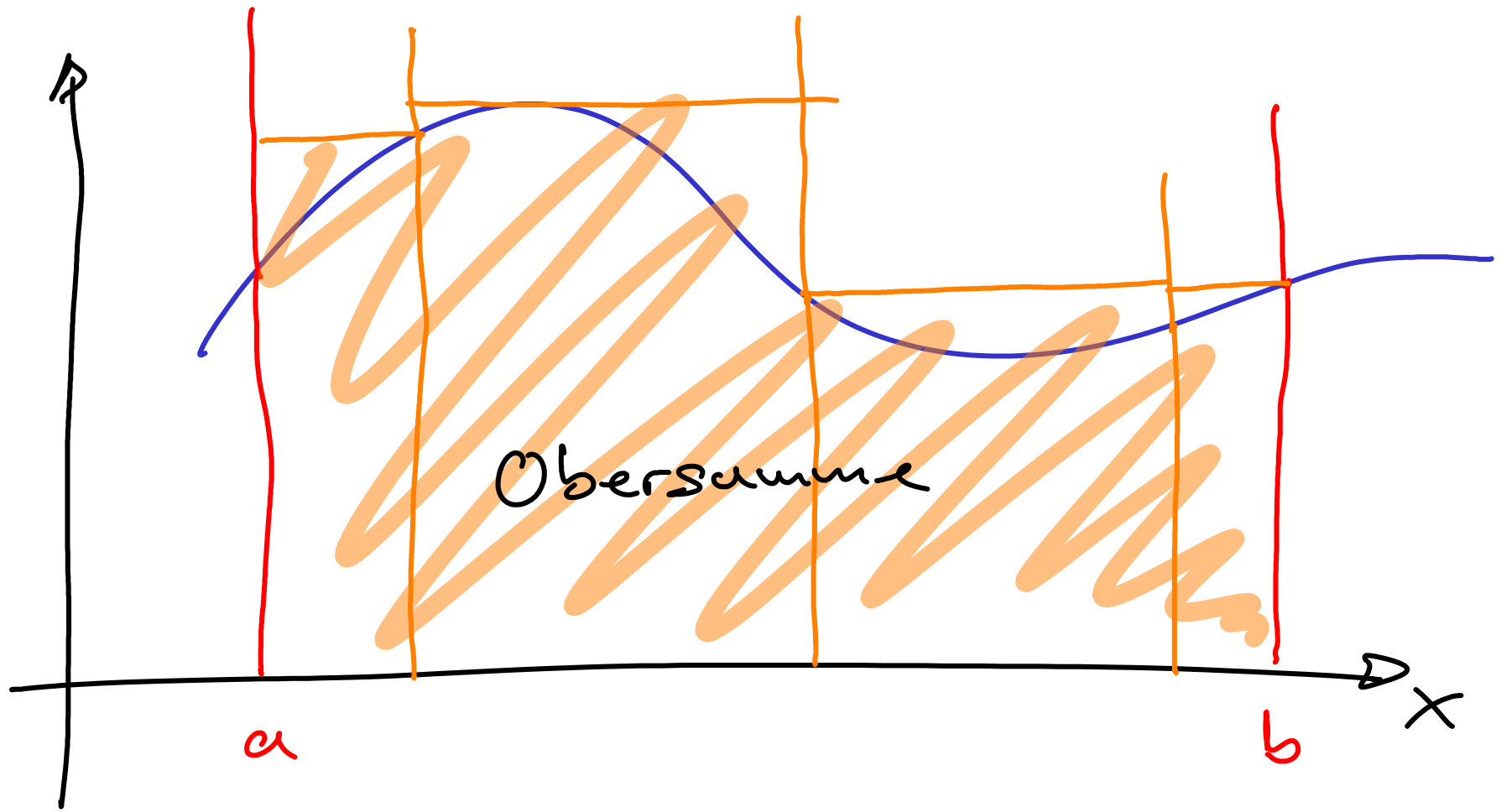
$$G = (t_2 - t_1) \cdot 1 \frac{\text{mm}}{\text{h}}$$

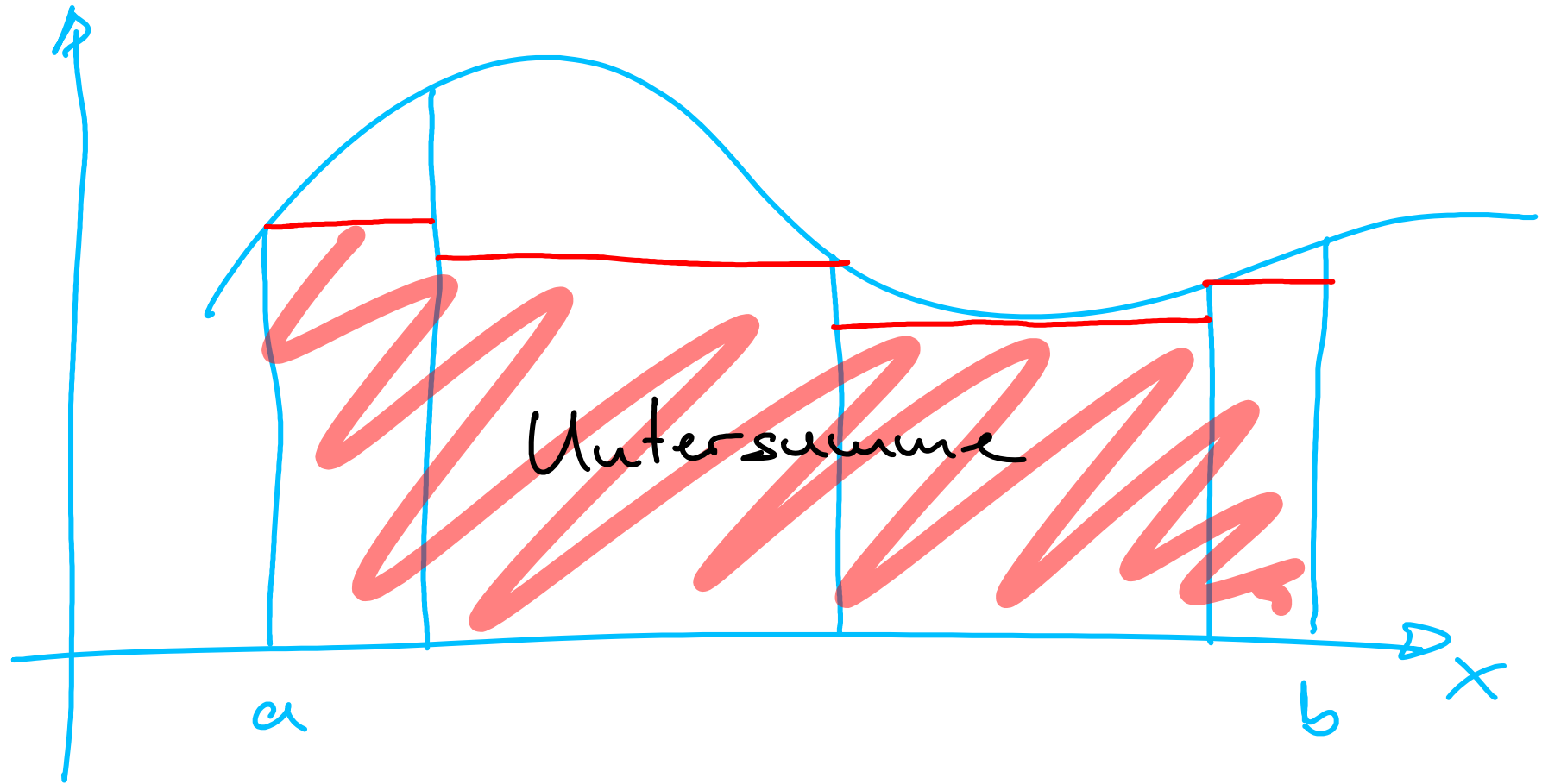
$$= (t - t_1) \cdot 1,5 \frac{\text{mm}}{\text{h}}$$

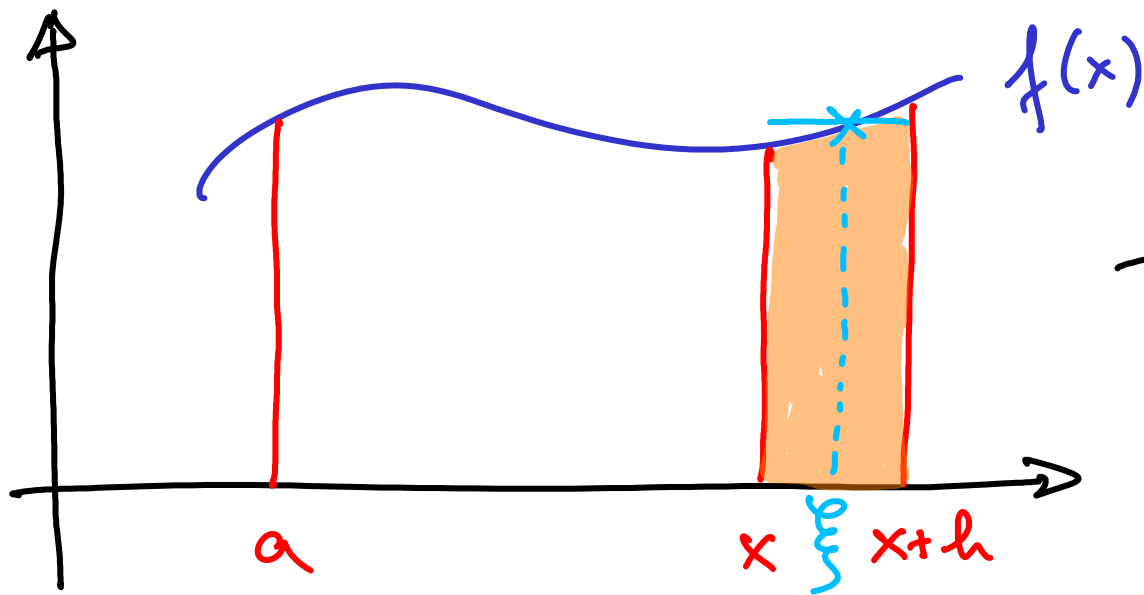


$$\int_a^b f(x) dx = \text{blue} - \text{red}$$









$$F(x) = \int_a^x f(y) dy$$

$$F'(x) = \lim_{h \rightarrow 0} \frac{F(x+h) - F(x)}{h} = \lim_{h \rightarrow 0} \frac{f(\xi) \cancel{h}}{\cancel{h}}$$

$\xrightarrow[h \rightarrow 0]{\xi \rightarrow x}$

$$= f(x)$$

$$\int_a^b \underbrace{\sum_{h=0}^n c_h x^h}_{f(x)} dx$$

Stammfunktion $F(x) = \sum_{h=0}^n c_h \frac{x^{h+1}}{h+1}$

||

$$F(b) - F(a)$$

||

$$\sum_{h=0}^n c_h \frac{b^{h+1}}{h+1} - \sum_{h=0}^n c_h \frac{a^{h+1}}{h+1}$$

||

$$\sum_{h=0}^n \frac{c_h}{h+1} (b^{h+1} - a^{h+1})$$

$$=: \left[F(x) \right]_a^b$$

hilfreiche Schreibweise

$$\int_4^5 \frac{dx}{x} = [\log x]_4^5 = \log 5 - \log 4$$
$$= \log \frac{5}{4}$$

Arbeit s_2

$$A = \int_{s_1}^{s_2} K(s) ds$$

Spezial: konstante Kraft $K(s) = K$

$$A = \int_{s_1}^{s_2} K ds = [Ks]_{s_1}^{s_2} = K(s_2 - s_1)$$

Kraft · Weg