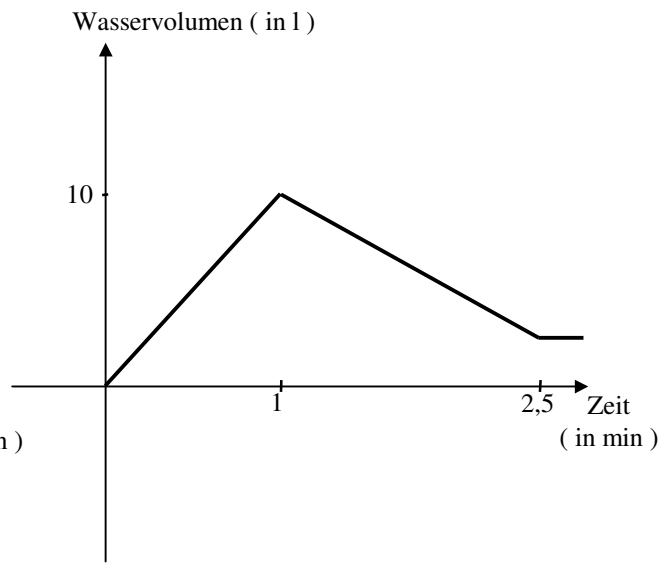
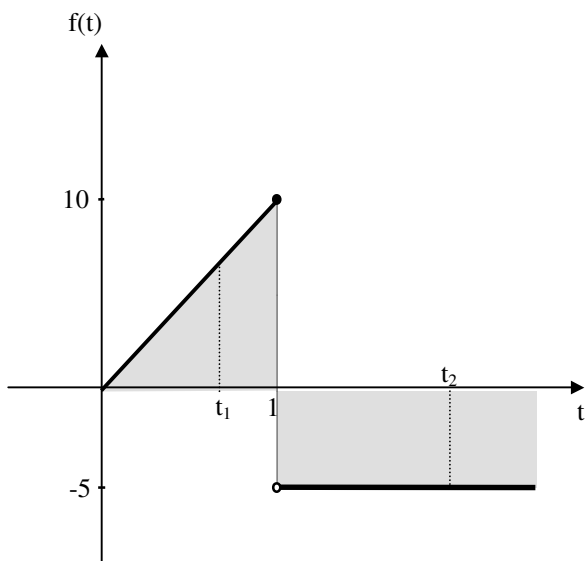


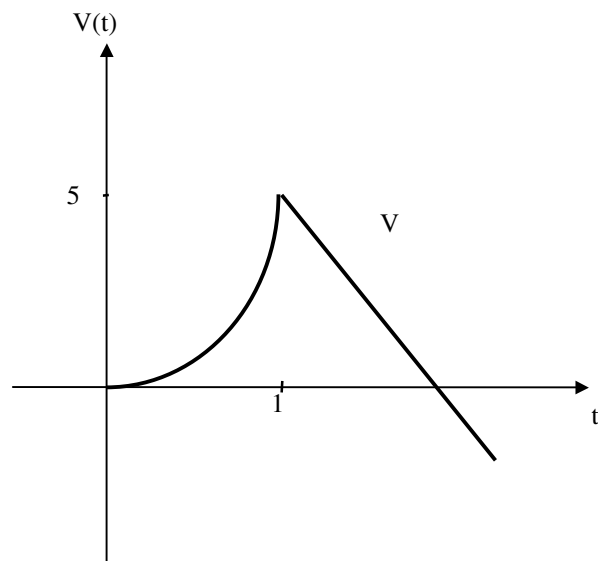
$$f(t) = \begin{cases} 10 & \text{für } 0 \leq t \leq 1 \\ -5 & \text{für } 1 < t \leq 2,5 \\ 0 & \text{für } t > 2,5 \end{cases}$$



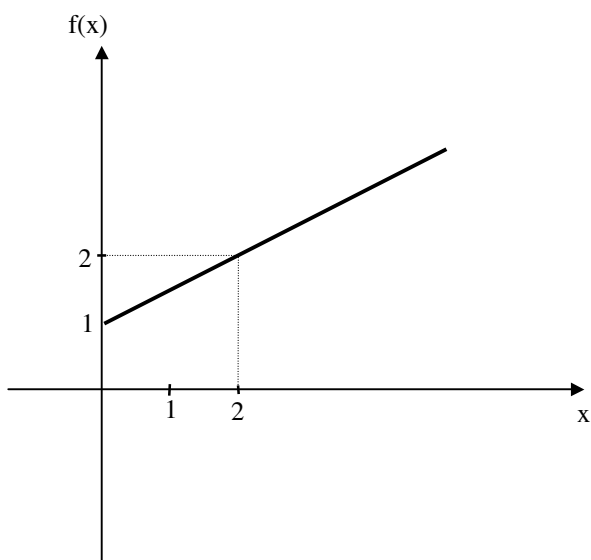
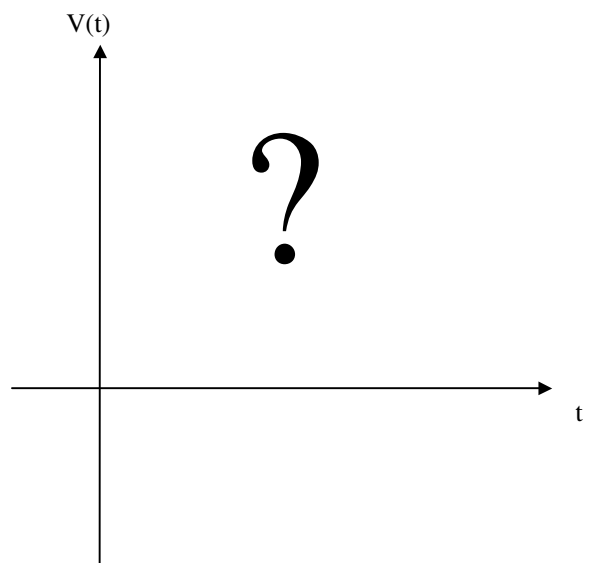
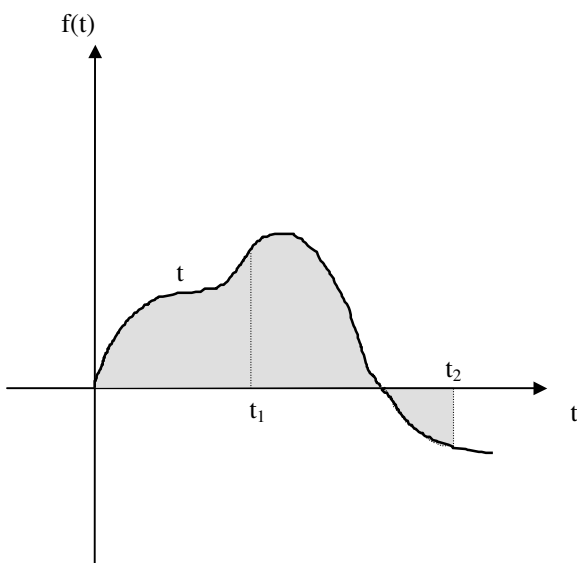
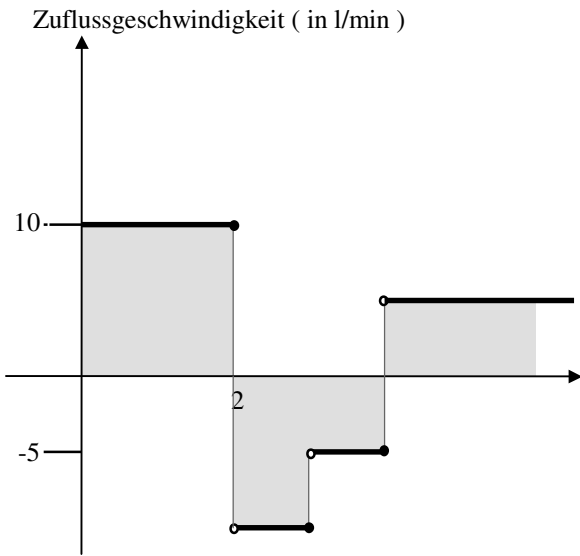
$$V(t) = \begin{cases} 10 t & \text{für } 0 \leq t \leq 1 \\ -5 t + 15 & \text{für } 1 < t \leq 2,5 \\ 2,5 & \text{für } t > 2,5 \end{cases}$$



$$f(t) = \begin{cases} 10 t & \text{für } 0 \leq t \leq 1 \\ -5 & \text{für } t > 1 \end{cases}$$



$$V(t) = \begin{cases} 5 t^2 & \text{für } 0 \leq t \leq 1 \\ -5 t + 10 & \text{für } t > 1 \end{cases}$$



$$f(x) = \frac{1}{2}x + 1$$

$$F(x) = \frac{1}{4}x^2 + x$$

**Regeln für das Ermitteln von unbestimmten Integralen:**

Potenzregel:  $\int x^n dx = \frac{1}{n+1} x^{n+1} + C \quad n \in \mathbb{G}; n \neq -1$

$\int x^q dx = \frac{1}{q+1} x^{q+1} + C \quad q \in \mathbb{R}; q \neq -1; x > 0$

Faktorregel:  $\int k \cdot f(x) dx = k \cdot \int f(x) dx \quad (k \in \mathbb{R})$

Summenregel:  $\int [f(x) \pm g(x)] dx = \int f(x) dx \pm \int g(x) dx$

Lineare Substitution:  $\int g(x) dx = \frac{1}{a} \int f(t) dt \quad \text{mit } t = ax + b$

(  $g(x) = f[z(x)]$  mit  $z(x) = ax + b$  ( Verkettung ) )