

problem 2:

$$b) V_C = \frac{24,3}{6+3} = 6V$$

$$\tau = R \cdot L = 6 \cdot 1/3 = \frac{6 \cdot 3}{6+3} = 2\Omega$$

$$\tau = 2 \cdot 2 = 4s$$

$$\begin{aligned} V_C(\infty) &+ (V_C(0) - V_C(\infty)) e^{-t/\tau} \\ &= 8 + (20 - 8) e^{-t/4} \Rightarrow 8 + 12 \cdot e^{-0,25t} V \\ V(t) &= 8 + 12 \cdot e^{-0,25t} V \end{aligned}$$

$$\begin{aligned} c) \quad C(t) &= \frac{dV(t)}{dt} = \frac{2}{2} \frac{d}{dt} (8 + 12 \cdot e^{-0,25t}) \\ &= 2 \cdot 12 \cdot (-0,25) \cdot e^{-0,25t} \\ i(t) &= -6e^{-0,25t} A \end{aligned}$$

Problem 3

