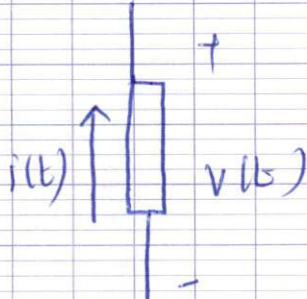


Quiz 2 Solution

Ex 1



$$v(t) = -15 \text{ V}$$
$$i(t) = 3e^{-t} \text{ A}$$

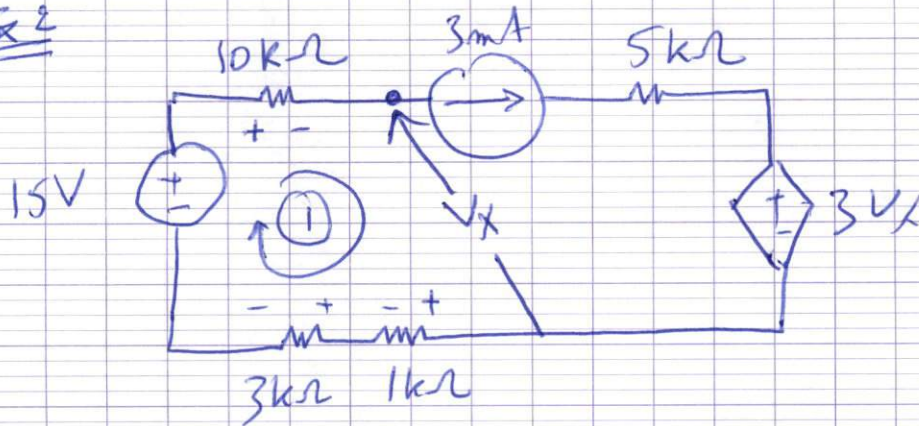
$$p(t) = -v(t)i(t) = -3e^{-t} \times (-15) = 45e^{-t} \text{ W}$$

$$W = \int_0^{\infty} p(t) dt = \int_0^{\infty} 45e^{-t} dt = 45(-e^{-t}) \Big|_0^{\infty}$$

$$= 45(0 - (-1))$$
$$= +45 \text{ J} > 0$$

↳ absorbing

Ex 2



Loop 1 · $-15 + V_{10} + V_x + V_1 + V_3 = 0$

$$-15 + 3 \times 10 + V_x + 1 \times 3 + 3 \times 3 = 0$$

$$\Rightarrow \boxed{V_x = -27 \text{ V}}$$