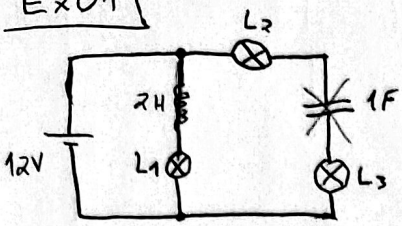
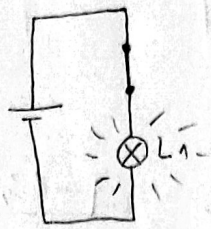
Atividade 2

Ex01

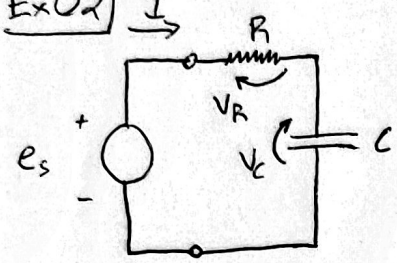


muito tempo ligado em DC ⇒

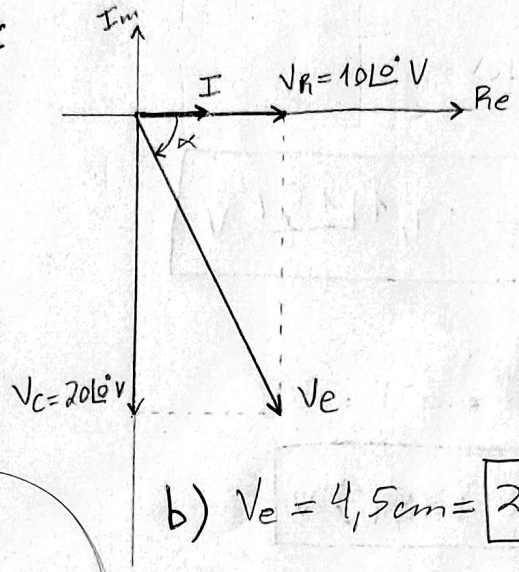


Somente L1 acende
∴ letra (D)

Ex02

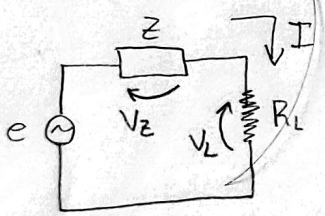


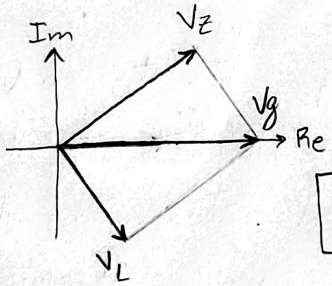
a) 1 cm = 5 V ; $V_R = 10V$, $V_C = 20V$



b) $V_e = 4{,}5\,cm = \boxed{22{,}5\,V}$

Ex03





- V_Z é indutivo
- Corrente está em fase com o resistor (atenuada).

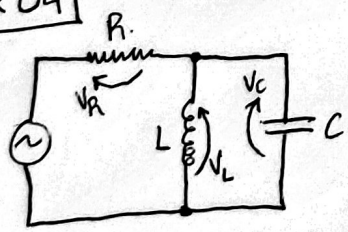
∴ letra (E)

Ex04

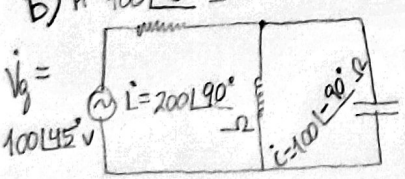
$R = 100\,\Omega$; $L = 0{,}1\,H$; $C = 5\,\mu F$

$V_g(t) = 141{,}4 \cos(2000t + 45°)\,V$ → $\alpha = 45°$

a) $V_{gef} = \frac{141{,}4}{\sqrt{2}} = 100\,V \Rightarrow \boxed{\dot{V}_g = 100\angle 45°\,V}$



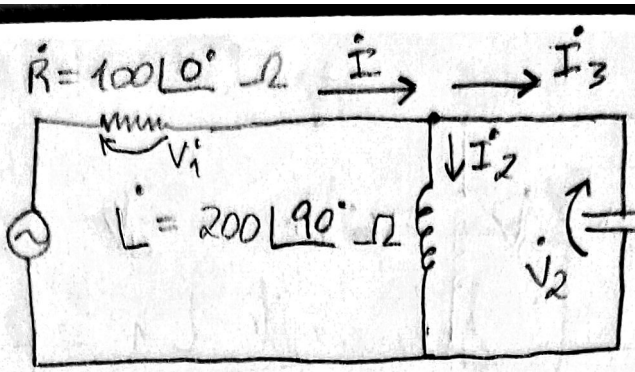
b) $\dot{R} = 100\angle 0°\,\Omega$

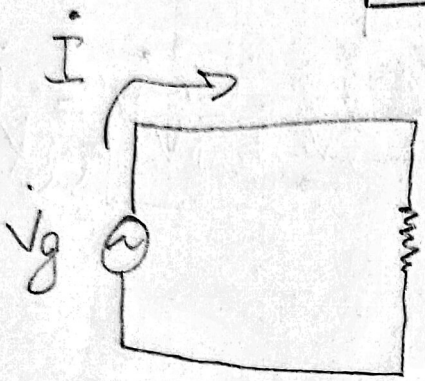


$\dot{L} = j\omega L = j \cdot 2000 \cdot 0{,}1 = 200\angle 90\,\Omega$

$\dot{C} = \frac{1}{j\omega C} = \frac{1}{j \cdot 2000 \cdot 5 \cdot 10^{-6}} = 100\angle -90\,\Omega$

c)





$$\dot{Z} = \dot{R} + \frac{\dot{L}\cdot\dot{C}}{\dot{L}+\dot{C}} = 223{,}6\angle -63{,}4\ \Omega$$

$$\dot{I} = \frac{\dot{V}_g}{\dot{Z}} = 0{,}447\angle 108{,}4°\ A$$

$$\dot{V}_1 = \dot{R}\cdot\dot{I} = 44{,}72\angle 108°\ V$$

$$\dot{V}_g = \dot{V}_1 + \dot{V}_2 \Rightarrow \dot{V}_2 = \dot{V}_g - \dot{V}_1 = 89{,}1\angle 18{,}4°\ V$$

d) $v_2(t) = V_2\sqrt{2}\cos(\omega t + \beta)$

$$v_2(t) = 89{,}1\sqrt{2}\cos(2000t + 18{,}4°)\ V$$