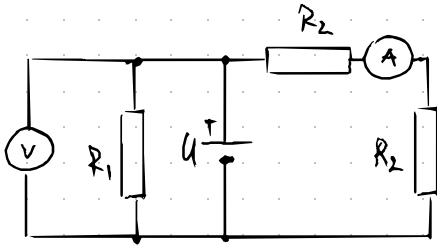


11.4.2024.

1.



$$R_2 = 40 \Omega$$

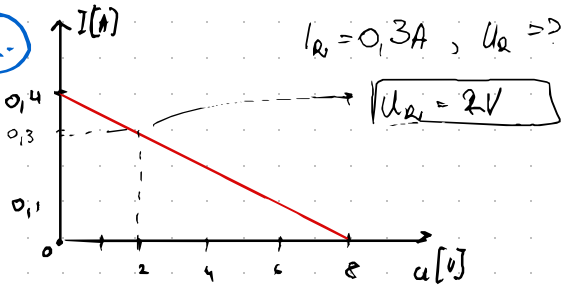
$$U = 16V$$

$$I = ?$$

$$I = \frac{16V}{80\Omega} = 0,2A$$

$$U = R_2 \cdot I + R_2 \cdot I \Rightarrow U = 2R_2 \cdot I$$

2.



3) Faza napona sinusnog izvora $10 \angle 120^\circ$, napiši funkciju fazora:

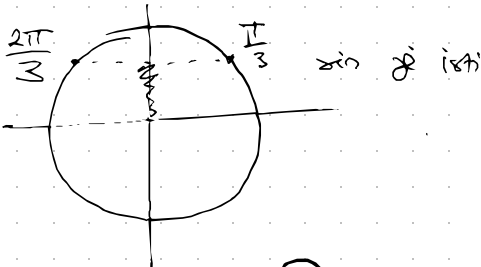
$$U_{ef} = 10$$

$$\rightarrow U_m = U_{ef} \sqrt{2}$$

$$U(t) = U_m \cdot \sin(\omega t + \alpha_u)$$

$$\alpha_u = 120^\circ = \frac{2}{3}\pi$$

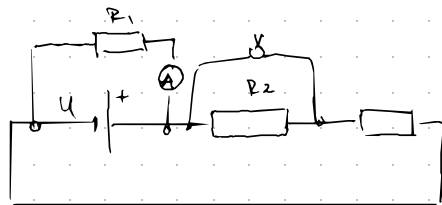
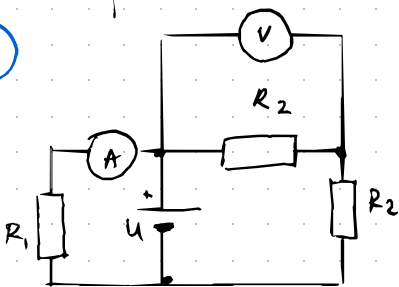
$$\rightarrow 14,14 \sin(\omega t + \frac{2\pi}{3})$$



$$\downarrow \quad \left(-\frac{\pi}{2}\right) \rightarrow \cos$$

$$14,14 \cos(\omega t + \frac{\pi}{6}) \quad \text{A}$$

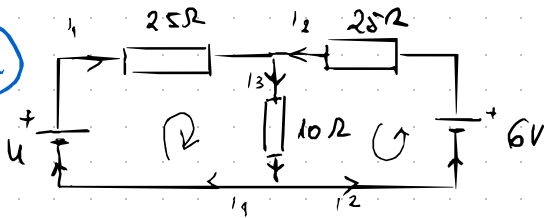
4.



$$U = 20V \quad R_1 = 10\Omega \quad R_2 = 5\Omega \quad A = ?$$

$$I = \frac{U}{R_1} = \frac{20}{10} = 2A$$

5.



$$U = 25 \cdot I_1 + I_3 \cdot 10$$

$$6 = I_2 \cdot 25 + I_3 \cdot 10$$

$$I_1 = 320 \text{ mA}$$

$$I_3 = I_1 + I_2$$

$$U = 25 \cdot 320 \times 10^{-3} + 400 \times 10^{-3} \cdot 10$$

$$I_2 = 80 \text{ mA}$$

$$I_3 = 400 \text{ mA}$$

$$U = 12 \text{ V}$$

6. Zadane su dvije sinusoidne struje koje imaju jednake amplitude (1A), ali su fazno pomaknute za 180° . Koliko je amplituda zbija tih struja?

$$I_m = 1 \text{ A}$$

$$\dot{I}_1 = 1 \sin(\omega t)$$

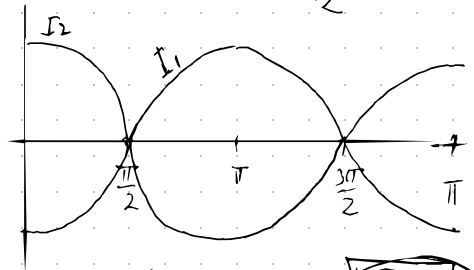
$$\varphi = 180^\circ \rightarrow \pi$$

$$\dot{I}_2 = \sin(\omega t + \pi)$$

$$\dot{I}_1 = \frac{\sqrt{2}}{2} \angle 0^\circ$$

$$\dot{I}_2 = \frac{\sqrt{2}}{2} \angle 180^\circ$$

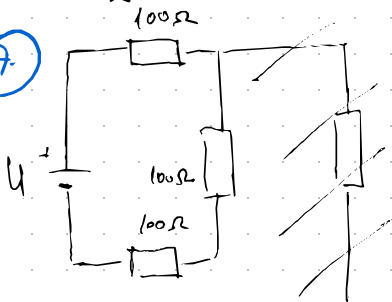
$$U_m = \frac{U_{ef}}{\sqrt{2}} \quad \frac{1}{\sqrt{2}} = \frac{\sqrt{2}}{2}$$



u protutisu su

$$0 \text{ A}$$

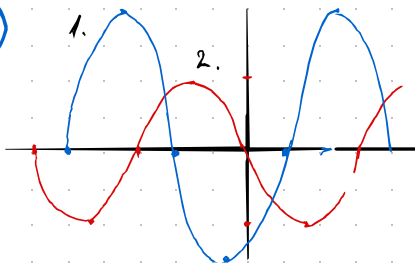
7.



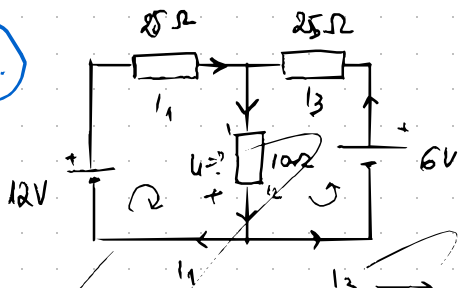
Serijski:

$$R_{\text{ukl}} = R_1 + R_2 + R_3 = 300 \Omega$$

8.



9.



$$12 = 25 \cdot i_1 + 10 \cdot i_2$$

$$6 = i_3 \cdot 25 + 10 \cdot i_2$$

$$i_2 = i_1 + i_3$$

$$12 = 25 i_1 + 10 (i_1 + i_3)$$

$$6 = i_3 \cdot 25 + 10 (i_1 + i_3)$$

$$6 = 25 (i_1 - i_3)$$

$$\frac{6}{25} = i_1 - i_3 \Rightarrow i_1 = \frac{6}{25} + 80 \text{ mA}$$

$$i_1 = 0,32 \text{ A} \rightarrow i_2 = 1,12 \text{ A}$$