Zadatak III. 2.1.

$\dot{U}_A = 7\angle 45°\ V \Rightarrow \dot{U}_B = 7\angle -75°\ V;\ \dot{U}_C = 7\angle 165°\ V$

$\dot{U}_{AB}, \dot{U}_{BC} = ?$

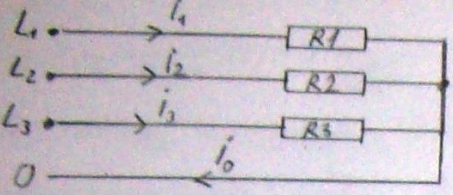
$\dot{U}_{AB} = \dot{U}_A - \dot{U}_B = 7\angle 45° - 7\angle -75° = 12{,}12\angle 75°\ V$

$\dot{U}_{BC} = \dot{U}_B - \dot{U}_C = 7\angle -75° - 7\angle 165° = 12{,}12\angle -45°\ V$

Zadatak III. 2.2.

$R_1 = R_2 = R_3 = 150\Omega;\ U_L = 12\ V,\ I_0 = ?$

a) $I_0 = ?$ (normalan režim)

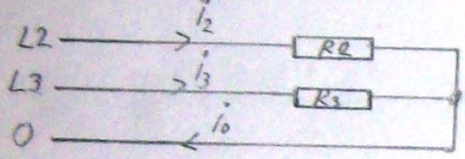


$\dot{U}_f = \frac{\dot{U}_L}{\sqrt{3}}$

$\dot{I}_0 = \dot{I}_1 + \dot{I}_2 + \dot{I}_3 = \frac{\dot{U}_{f1}}{R_1} + \frac{\dot{U}_{f2}}{R_2} + \frac{\dot{U}_{f3}}{R_3} = \frac{12\angle 0°}{150\sqrt{3}} + \frac{12\angle -120°}{150\sqrt{3}} + \frac{12\angle 120°}{150\sqrt{3}}$

$\underline{I_0 = 0\ A}$

b) $I_0 = ?$ kada je L1 prekinut



$\dot{U}_f = \frac{\dot{U}_L}{\sqrt{3}}$

$\underline{\dot{I}_0 = \dot{I}_2 + \dot{I}_3 = \frac{\dot{U}_{f2}}{R_2} + \frac{\dot{U}_{f3}}{R_3} = \frac{12\angle -120°}{150\sqrt{3}} + \frac{12\angle 120°}{150\cdot\sqrt{3}} = 0{,}04619A = 46{,}19\ mA}$

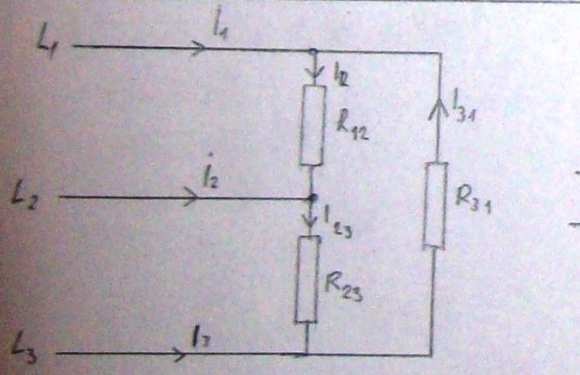
c) $P = ?$

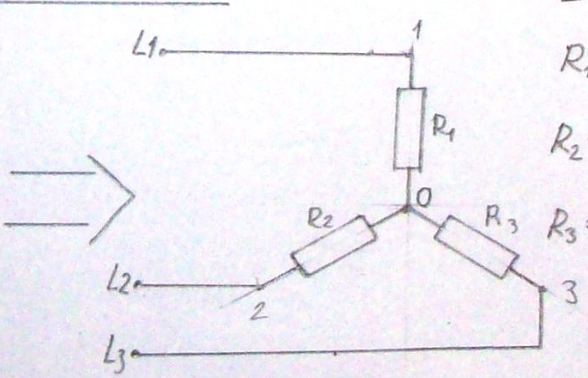
$\underline{P = 3P_f = 3\cdot U_{f1}\cdot I_1 = 3\cdot \frac{12}{\sqrt{3}}\cdot\frac{12}{150} = 1{,}66W}$

Zadatak III. 2.3.

$R_{12} = 220\Omega;\ R_{31} = 150\Omega;\ R_{23} = 330\Omega;\ U_L = 12V$

$P = ?$





$\Delta R = R_{12} + R_{23} + R_{31} = 700\Omega$

$R_1 = \frac{R_{12}\cdot R_{31}}{\Delta R} = 47{,}14\Omega$

$R_2 = \frac{R_{23}\cdot R_{12}}{\Delta R} = 103{,}71\Omega$

$R_3 = \frac{R_{31}\cdot R_{23}}{\Delta R} = 70{,}71\Omega$

$P = U_L^2 \cdot \left(\frac{1}{R_{12}} + \frac{1}{R_{23}} + \frac{1}{R_{31}}\right) = 12^2 \cdot \left(\frac{1}{220} + \frac{1}{330} + \frac{1}{150}\right)$

$\underline{P = 2{,}05W}$