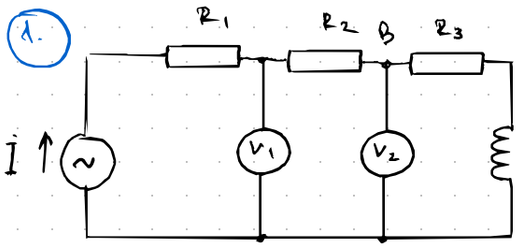
DZ 2

1.



$I = ?\ (mA)$

$U_1 = ?\ (V)$

$R_1 = 26\Omega \qquad U_2 = 23V \qquad R_3 = 36\Omega$

$Z_2 = 40\Omega$

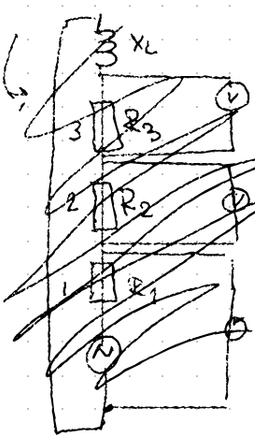
$U_1 = 33V$

$R_1 = 46\Omega$

$R_2 = 34\Omega$

$R_3 = 31\Omega$

$X_L = 15\Omega$



$U_2 = 23V$

$U_2 = I \cdot (R_3 + jX_L)$

$\angle 0° = \frac{U_2}{R_3 + jX_L} = \frac{23\angle 0°}{36 + 40j}$

$I\angle 0° = \frac{23\angle 0°}{4\sqrt{181}\angle 48{,}01} \rightarrow I = 0{,}427A\ \angle 0°$

$Z = \frac{U}{I} \rightarrow Z_{uk} = R_1 + R_2 + R_3 + jX_L$

$Z_{uk} = 26\Omega + 40 + 36 + 40j$

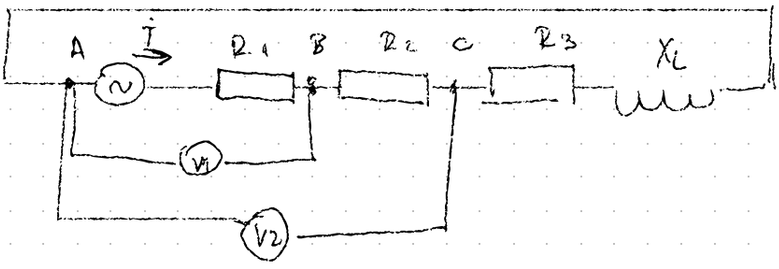
$Z_{uk} = 109{,}563\angle 21{,}4°$

$U = I \cdot Z_{uk}$

$U = 46{,}783\angle 21{,}4°$

-Struja je svuda jednaka jer je serijski spoj

$I = 427mA$



$U_2 = I \cdot R_1 + I \cdot R_2$

$23V = I(R_1 + R_2) \rightarrow I = \frac{23}{66}$

$I = 348{,}48mA$

$U_1 = I \cdot R_1$

$= 0{,}34848 \cdot 26$

$U_1 = 9{,}06V$

Nekad mi dođe da ubijem i Dinu i sebe

Zato:?

$U_2 \Rightarrow R_2 + X_L = \frac{U_2}{I} \rightarrow I = \frac{U_2}{R_2 + jX_L} = 0{,}40659\angle -45°\ A$?

Zašto R_2

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nešto postupak:

$U_2 = I \cdot (R_3 + jX_L)$

$I = \frac{U_2}{R_3 + jX_L} = \frac{23}{36 + 40j} = \frac{23}{4\sqrt{181}\angle 48°} = 0{,}42739\angle -48{,}01°$

$\dot{I}$

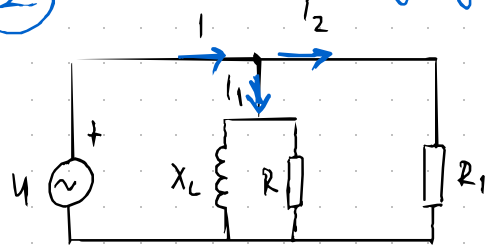
$\dot{u} = \dot{i} \cdot \dot{z} \rightarrow \dot{z} = R_1 + R_2 + R_3 + jX_L = 109{,}56\angle 21{,}41°$

$U_1 = I(R_1 + R_2 + R_3 + jX_L)$

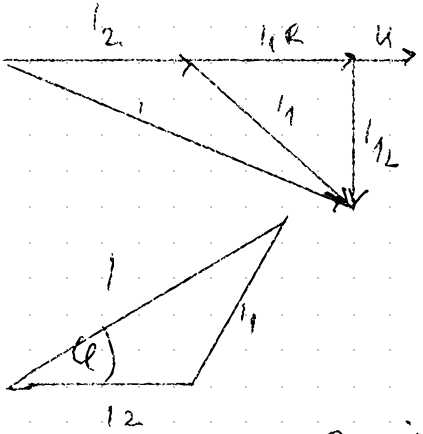
$R_2 + R_3 + jX_L = 4\sqrt{461}\angle 27{,}76°$

$U_1 = 36{,}706\angle -20{,}25°$

(2) netko sa Discorda je sjeo



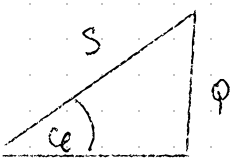
MOJE	netko
$I = 31\,A$	30
$I_1 = 19A$	20
$I_2 = 17A$	16
$R_1 = 6\Omega$	5



$$I_1^2 = I^2 + I_2^2 - 2I \cdot I_2 \cos\varphi$$

$$\varphi = \arccos\left(\frac{I_1^2 - I^2 - I_2^2}{-2I \cdot I_2}\right)$$

$$\varphi = 32{,}493°$$



$$S = \dot{U} \cdot \dot{I} = U \cdot I = I_2 \cdot R_1 \cdot I = 3162$$

$$Q = \frac{U^2}{X_L} = U \cdot I \cdot \sin\varphi \Rightarrow Q = 1698{,}616\,Ar$$

$$X_L = \frac{U^2}{U I \sin\varphi} = \frac{U}{I \sin\varphi} = 6.125\,\Omega = X$$

$$P_{uk} = S \cdot \cos\varphi = 2667{,}01\,W$$

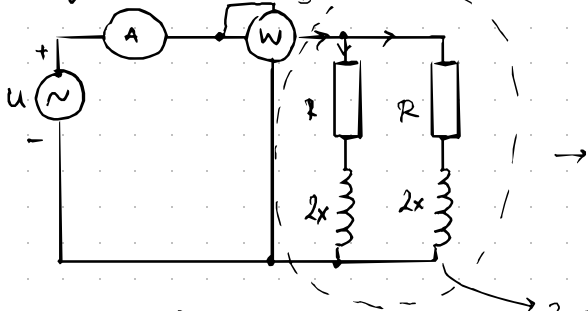
$$P_1 = I_2^2 \cdot R_1 = 1734\,W \rightarrow P_2 = P_{uk} - P_1$$

$$P_2 = 933{,}01\,W$$

$$P_2 = \frac{U^2}{R} \Rightarrow R = \frac{U^2}{P_2} = 11{,}15\,\Omega$$

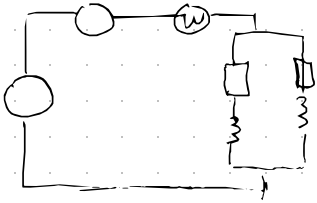
RJ

Granica trošila



$R = 5\,\Omega$ $P_W = 342\,W$

$X = 2X = 8\,\Omega$



$I = ?$ $U = ?$ $S = ?$

$Z_1 = 5 + 8j$ → to je trošila

↳ ali jednaki su u obje grane

$P = I^2 \cdot R$ $P = \frac{U^2}{R}$

$I = \sqrt{\frac{P}{R}}$ $U = \sqrt{P \cdot R}$

$I = \sqrt{\frac{342}{5}}$ $U = 41{,}3521\,A$

$I = 8{,}2704\,A$