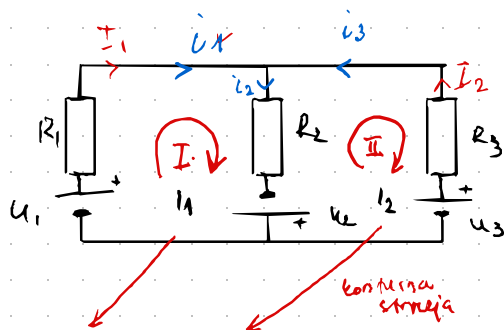


11. KONTURE STRUJE



$$I_1 = I_2 + I_3$$

konture:

$$1) i_1 R_1 + i_2 R_2 = U_1 + U_2$$

$$2) i_3 R_3 - i_2 R_2 = -U_3 - U_2$$

$$I_1 (Z_{11}) - I_2 (Z_{12}) = \sum U \quad \text{zajednički el.}$$

$$-I_1 (Z_{21}) + I_2 (Z_{22}) = \sum U \quad \text{zajednički el.}$$

opcijom jedna nova
traže konture struje

$$1) I_1 (R_1 + R_2) - I_2 R_2 = U_1 + U_2 \quad (\text{oba ide u istu stranu pa je +})$$

$$2) -I_1 R_2 + I_2 (R_2 + R_3) = -U_3 - U_2$$

ono kroz što
ide I₂

$I_1 \dots$

$$I_1 = i_1$$

jer ide u istu stranu

$I_2 \dots$

$$I_2 = i_3$$

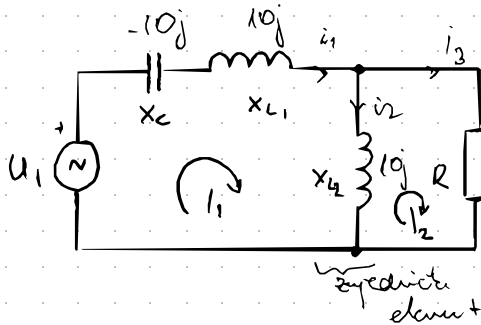
$$I_1 - I_2 = i_2$$

$$i_1 = i_2 + i_3$$

$$I_1 - I_2 = i_2$$

=> kada bismo to supstituirali u Kirchhoffovu jednačinu (prvo gore denu)
dobili bismo iste izraze kao općeniti oblik za konture.

12. WETO 2020/2021.



$i_1 = ?$

$u_1 = 40V$ $R = X_{L1} = X_{L2} = 10\Omega$
 $X_C = 20\Omega$

$$I_1 (Z_{11}) - I_2 (Z_{12}) = \sum U$$

$$-I_1 (Z_{12}) + I_2 (Z_{22}) = \sum U$$

$$I_1 (X_C + X_{L1} + X_{L2}) - I_2 \cdot X_{L2} = u_1$$

$$-I_1 X_{L2} + I_2 (R + X_{L2}) = 0$$

$$I_1 = i_1$$

$$I_2 = i_3$$

$$i_1 = i_3 + i_2$$

$$i_2 = i_1 - i_3$$

$$I_1 - I_2 = i_2$$

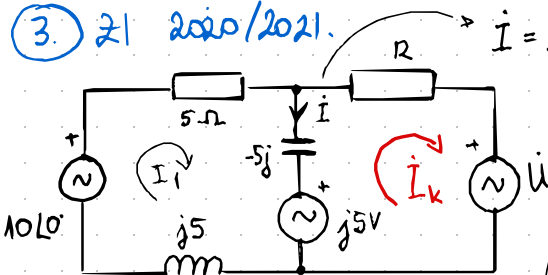
$$I_1 (-20j + 20j) - I_2 \cdot 10j = 40$$

$$\underline{-I_2 = \frac{40}{10j} = -4j} \rightarrow I_2 = 4j \Rightarrow -I_1 \cdot 10j + 4j(10 + 10j) = 0$$

$$I_1 = \frac{4j(10 + 10j)}{10j}$$

$$I_1 = 4 + 4j$$

3. 21 2020/2021.



$$I = 3\angle 0^\circ A$$

$I_k = ?$

$$I_1 - I_k = 1$$

$$I_1 (5 - 5j + 5j) - I_k (-5j) = 10 - j5$$

$$I_k (-5j + R) - I_1 (-5j) = j5 - u$$

$$5I_1 + 5jI_k = 10 - 5j$$

$$5I_1 = 10 - 5j - 5jI_k \quad / : 5$$

$$\underline{I_1 = 2 - j - jI_k}$$

$$I_1 - I_k = 1$$

$$2 - j - jI_k - I_k = 3$$

$$-jI_k - I_k = 1 + j$$

$$I_k (-j - 1) = 1 + j \quad / : (-j - 1) \rightarrow \underline{I_k = -1A}$$