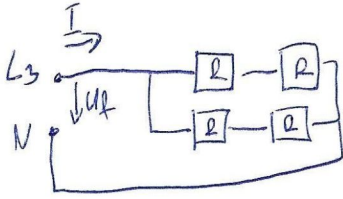


1.

Myilott kápusdó:



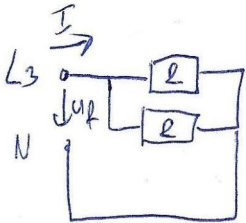
$$U_f = \frac{U_N}{\sqrt{3}} = \frac{20 \text{ kV}}{\sqrt{3}} = 11,547 \text{ kV}$$

$$R = 180 \Omega \rightarrow R_e = 180 \Omega$$

$$I = \frac{U}{R} = \frac{11547}{180} = 64,15 \text{ A}$$

$$P = \frac{U^2}{R} = \frac{11547^2}{180} = 740,7 \text{ kW}$$

Zárt kápusdó:



$$U_f = \frac{U_N}{\sqrt{3}} = \frac{20 \text{ kV}}{\sqrt{3}} = 11,547 \text{ kV}$$

$$R = 180 \Omega \rightarrow R_e = 90 \Omega$$

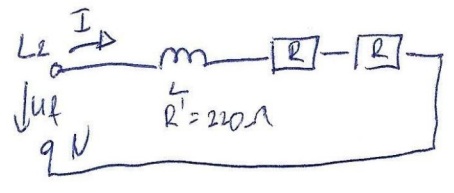
$$P = \frac{U^2}{R} = \frac{11547^2}{90} = 1,481 \text{ MW}$$

$$I = \frac{U}{R} = \frac{11547}{90} = 128,3 \text{ A}$$

2. feladat

Nyitott kapcsú ábrán:

$$R = 180 \Omega$$



$$U_f = \frac{U_v}{\sqrt{3}} = \frac{20 \text{ V}}{\sqrt{3}} = 11,547 \text{ V}$$

$$R_e = 2\pi f L_2 + 2R + R' = (534,07j + 580) \Omega$$

$$I = \frac{11547}{534,07j + 580} = 10,77 - 9,92 \text{ A}$$

$$S = U \cdot I^* = (124,36 + 114,54j) \text{ kVA}$$

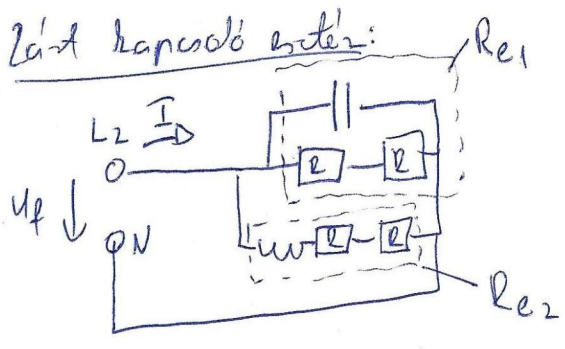
$$P = 124,36 \text{ kW}$$

$$Q = +114,54 \text{ kVAR}$$

$$\varphi = 42,64^\circ$$

$$\cos \varphi = \frac{P}{|S|}$$

Zárt kapcsú ábrán:



$$R_{e1} = 256,9 - 162,72j \Omega$$

$$R_{e2} = 534,07j + 580 \Omega$$

$$U_f = \frac{U_v}{\sqrt{3}} = \frac{20 \text{ V}}{\sqrt{3}} = 11,547 \text{ V}$$

$$R_e = R_{e1} \times R_{e2} = 254,5 - 61,73j$$

$$I = \frac{U}{R_e} = \frac{11547}{254,5 - 61,73j} = 42,84 + 10,39i \text{ A}$$

$$S = U \cdot I^* = 494,673 - 115,973i \text{ kVA}$$

$$P = 494,673 \text{ kW}$$

$$Q = -115,973 \text{ kVAR}$$

$$\varphi = 13,632$$

$$\cos \varphi = \frac{P}{|S|}$$