

2. TRANSZFORMÁTOROK

2.1. Egyfázisú transzformátorok

$$d) I_2 = \frac{P_2}{U_{2i}} = \frac{200}{24} = 8,33 \text{ A}$$

$$I_2 = 8,33 \text{ A}$$

$$e) I_1 = \frac{I_2}{a} = \frac{8,33}{9,16} = 0,9 \text{ A}$$

$$I_1 = 0,9 \text{ A}$$

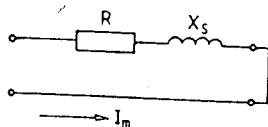
$$f) Z_1 = \frac{U_1}{I_1} = \frac{220}{0,9} = 242 \Omega$$

$$Z_1 = 242 \Omega$$

$$g) \epsilon = \frac{U_Z}{U_1} = \frac{10}{220} = 0,045 \rightarrow \epsilon_{\%} = 4,5 \%$$

$$\epsilon = 4,5 \%$$

a)



2.1.3. feladat

$$\epsilon_z = \frac{U_{zn}}{U_1} \cdot 100$$

$$P_{in} = U_{2n} \cdot I_{1n} \cdot \cos \varphi_z$$

$$I_{1n} = \frac{S_n}{U_1} = \frac{25 \cdot 10^3}{5 \cdot 10^3} = 5 \text{ A}$$

$$U_{zn} = \frac{P_{in}}{I_{1n} \cdot \cos \varphi_z} = \frac{0,06 \cdot 25 \cdot 10^3}{5 \cdot 0,36} = 833,3 \text{ V}$$

$$Z_z = \frac{U_{zn}}{I_{1n}} = \frac{833,3}{5} = 166,6 \Omega$$

$$Z_z = 166,6 \Omega$$

$$R = Z_z \cdot \cos \varphi_z = 166,6 \cdot 0,36 \approx 60 \Omega$$

$$R = 60 \Omega$$

$$X_s = Z_z \cdot \sin \varphi_z = 166,6 \cdot 0,93 = 155,42 \Omega$$

$$X_s = 155,42 \Omega$$

$$b) \epsilon_z = \frac{U_{zn}}{U_{1n}} \cdot 100 = \frac{833,3}{5000} \cdot 100 = 16,6 \%$$

$$\epsilon_z = 16,6 \%$$

$$\epsilon_R = \epsilon_z \cdot \cos \varphi_z = 0,166 \cdot 0,36 = 0,059 = 5,9 \%$$

$$\epsilon_R = 5,9 \%$$