

$$67 = \frac{380}{\sqrt{3} \cdot \sqrt{(0,795 + R_i)^2 + 1,2^2}}$$

$$\sqrt{(0,795 + R_i)^2 + 1,2^2} = \frac{380}{\sqrt{3} \cdot 67} \rightarrow R_i = 2,255 \, \Omega$$

$$R_i = 2,255 \, \Omega$$

5.1.13. feladat

$$a) s = \frac{n_0 - n}{n_0} \cdot 100 = \frac{1000 - 950}{1000} \cdot 100 = 5 \, \%$$

$$s = 5 \, \%$$

$$b) P_m = (1 - s) \cdot P_\delta, \text{ ahol } P_m = P_n + P_s = 20600 + 1472 = 22072 \, \text{W}$$

$$P_\delta = \frac{P_m}{1 - s} = \frac{22072}{1 - 0,05} = 23233$$

$$P_{r2} = s \cdot P_\delta = 0,05 \cdot 23233 = 1161,65 \, \text{W}$$

$$P_{r2} = 1161,65 \, \text{W}$$

$$c) P_1 = P_\delta + P_{1v0} = 23233 + 2000 = 25233 \, \text{W}$$

$$P_1 = 25,233 \, \text{kW}$$

$$I_1 = \frac{P_1}{\sqrt{3} \cdot U_{l1} \cdot \cos \varphi} = \frac{25233}{\sqrt{3} \cdot 550 \cdot 0,88} = 30,14 \, \text{A}$$

$$I_1 = 30,14 \, \text{A}$$

5.1.14. feladat

$$a) s = \frac{n_0 - n}{n_0} = \frac{1500 - 1470}{1500} = 0,02$$

$$s = 2 \, \%$$

$$b) P_1 = \sqrt{3} \cdot U_{l1} \cdot I_1 \cdot \cos \varphi = \sqrt{3} \cdot 380 \cdot 69 \cdot 0,88 = 39917 \, \text{W}$$

$$P_1 = 39,917 \, \text{kW}$$

$$\eta = \frac{P}{P_h} = \frac{37}{39,917} = 0,92$$

$$\eta = 0,92$$

$$c) M = \frac{P}{\omega_s} = \frac{P}{2 \cdot \pi \cdot n} = \frac{9,55 \cdot \frac{37000}{1470}}{60} = 240,4 \, \text{N} \cdot \text{m}$$

$$M = 240,4 \, \text{N} \cdot \text{m}$$

5.1.15. feladat

$$a) n_0 = \frac{60 \cdot f_1}{p} = \frac{60 \cdot 50}{2} = 1500 \, \text{1/min}$$

$$n_0 = 1500 \, \text{1/min}$$

$$s = \frac{n_0 - n}{n_0} = \frac{1500 - 1475}{1500} = 0,0166$$

$$s = 1,66 \, \%$$