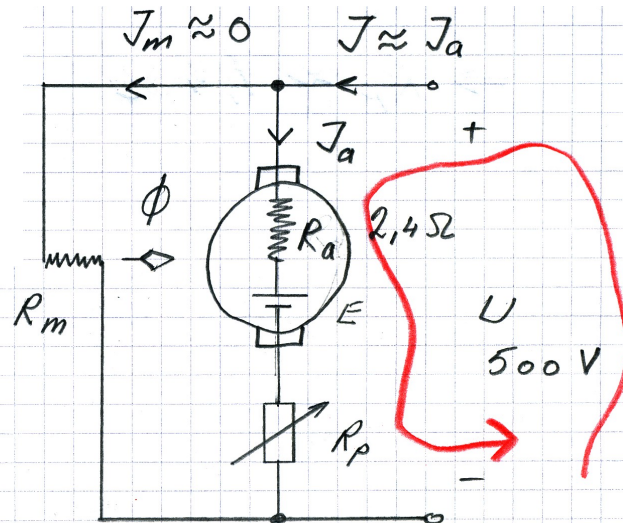


3.5



FALL I (FULLAST, MÄRKDRIFT)

$$P_2 = 10 \text{ kW}$$

$$\eta = 0,78$$

$$\eta = \frac{P_2}{P_1} \Rightarrow P_1 = 12821 \text{ W}$$

$$P_1 = U J_I \approx U J_{aI} \Rightarrow J_{aI} = 25,6 \text{ A}$$

FALL II (START, $\eta_{II} = 0$)

$$\frac{M_{II}}{M_I} = 2 \quad \frac{M_{II}}{M_I} = \frac{k_e \Phi J_{aII}}{k_e \Phi J_{aI}}$$

$$\frac{J_{aII}}{J_{aI}} = 2 \Rightarrow J_{aII} = 51,3 \text{ A}$$

$$+U - R_a J_a - E - R_p J_a = 0$$

$$\Rightarrow +500 - 2,4 \cdot 51,3 - k_e \Phi \cdot 0 - R_p \cdot 51,3 = 0$$

$$\Rightarrow R_p \approx 7,4 \Omega$$