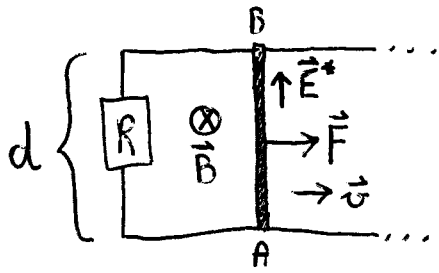


18.)



a.) $v_{max} = ?$

b.) $I_{max} = ?$

$$\vec{E}^* = \vec{v} \times \vec{B}$$

$$\mathcal{E}_{AB} = \int_A^B (\vec{v} \times \vec{B}) \cdot d\vec{s}$$

$$P = \vec{F} \cdot \vec{v} \quad P = \frac{\mathcal{E}^2}{R}$$

a.) $\vec{v} \perp \vec{B}$ és $\vec{E}^* \parallel d\vec{s}$

$E^* = vB$ állandó a rúd mentén

$$\mathcal{E}_{AB} = vBd = \mathcal{E}$$

Ha $v = v_{max}$ $P_F = P_R$

$$F \cdot v_{max} = \frac{\mathcal{E}_{max}^2}{R}$$

$$F \cdot v_{max} = \frac{v_{max}^2 B^2 d^2}{R}$$

$$\Downarrow$$

$$v_{max}$$



b.)

$$I_{max} = \frac{\mathcal{E}_{max}}{R} = \frac{Bd v_{max}}{R} = \dots$$