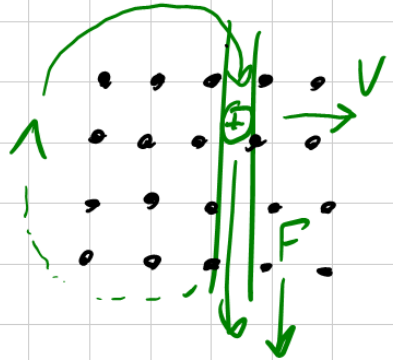


INDUCTION EXAMPLES FROM NOTES

EX. 1

$$\begin{aligned} \mathcal{E} &= BLv \\ \mathcal{E} &= (0.2\text{T})(1.0\text{m/s})(0.25\text{m}) \\ \mathcal{E} &= 0.05\text{ Volts} \end{aligned}$$

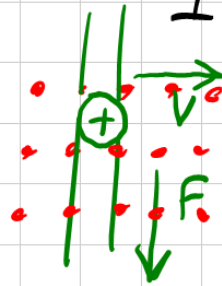


$$V = IR$$

EX. 2

$$\begin{aligned} \mathcal{E} &= BLv \\ \mathcal{E} &= (0.3)(2)(0.15) \\ \mathcal{E} &= 0.09\text{ V} \end{aligned}$$

$$\begin{aligned} 0.09\text{ V} &= I(4.0\Omega) \\ I &= 0.0225\text{ A} \end{aligned}$$



DOWN THE CONDUCTING ROD!

EX. 3

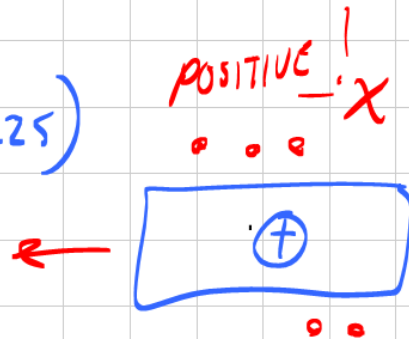
$$\begin{aligned} \mathcal{E} &= BLv \times (N) \\ \mathcal{E} &= (0.85\text{T})(4.5\text{m/s})(0.28)(5) \\ \mathcal{E} &= 5.355\text{ V} \end{aligned}$$

$$\begin{aligned} V &= IR \\ 5.355\text{ V} &= I(3) \\ I &= 1.785\text{ A} \end{aligned}$$

INDUCED CURRENT CCW

EX. 4

$$\begin{aligned} \mathcal{E} &= BLv \\ \mathcal{E} &= (0.086\text{T})(15\text{m/s})(0.25) \\ \mathcal{E} &= 0.3225\text{ V} \end{aligned}$$



POSITIVE! X

EX.5

$$\mathcal{E} = N \frac{\Delta BA}{\Delta t}$$

$$\mathcal{E} = N \frac{(BA_2 - BA_1)}{\Delta t}$$

$$\mathcal{E} = 600N \frac{(-0.01(2.64 \times 10^{-2}) - (0.08T \times 2.64 \times 10^{-2}))}{0.25 \text{ SEC}}$$

$$\mathcal{E} = 600 \left(\frac{-0.00264 - 0.002112}{0.25} \right)$$

$$\mathcal{E} = 600 \left(\frac{-0.004752}{0.25} \right)$$

$$\mathcal{E} = \pm 5.7 \text{ V}$$