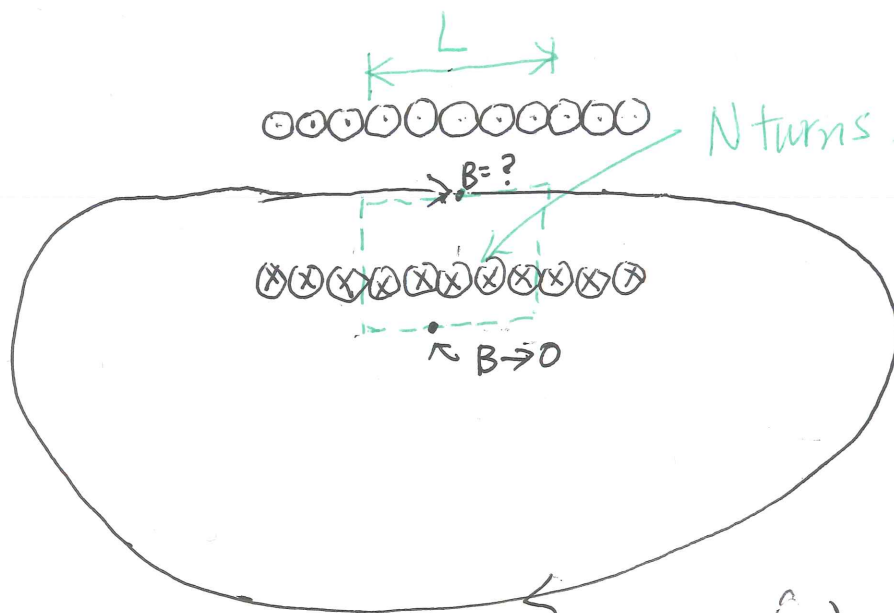




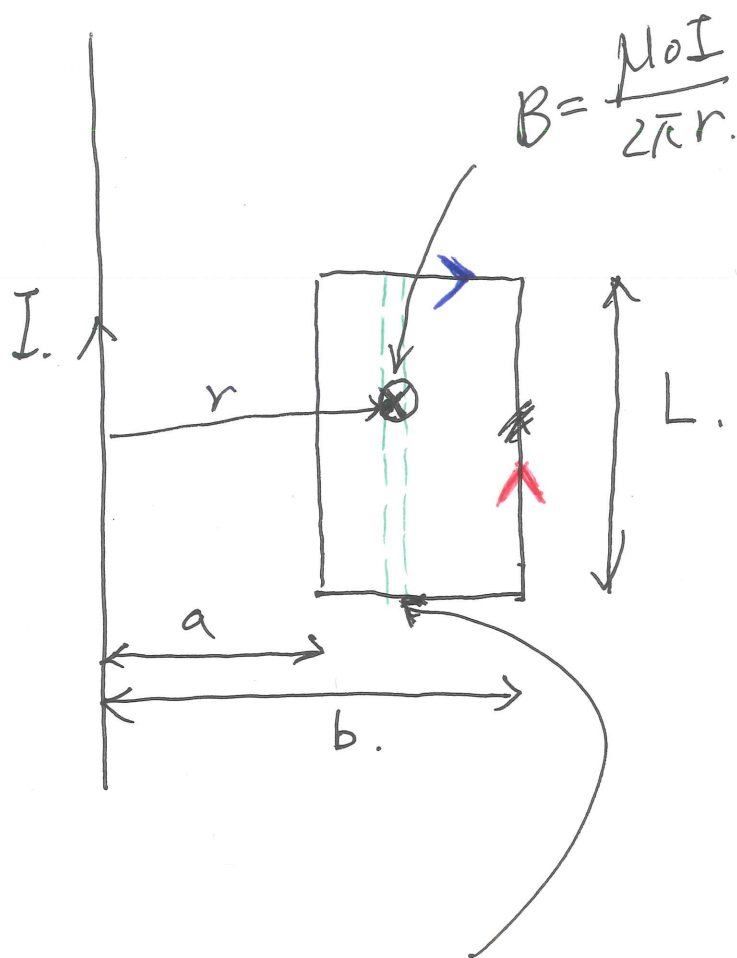
$$\oint \vec{B} \cdot d\vec{l} = \mu_0 I_{en.}$$

$$\oint \vec{B} \cdot d\vec{l} = BL + 0 + 0 + 0$$

$$\therefore BL = \mu_0 \cdot N \cdot I.$$

$$B = \mu_0 \frac{N}{L} \cdot I = \mu_0 n I$$

$\uparrow$
of turns per unit length.



Magnetic flux through this infinitesimal strip
 $= \frac{\mu_0 I}{2\pi r} \cdot L dr$

$$\begin{aligned} \text{Total flux} &= \int_a^b \frac{\mu_0 I}{2\pi r} L dr = \frac{\mu_0 I L}{2\pi} \int_a^b \frac{dr}{r} \\ &= \underline{\underline{\frac{\mu_0 I L}{2\pi} \ln \frac{b}{a}}} \end{aligned}$$

Flux is ~~not~~ negative.

Flux is positive.