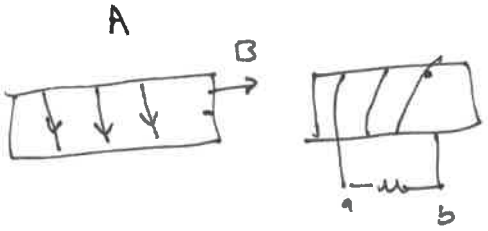
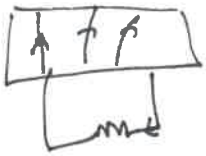
Class 32 – phys 341 – textbook part – ch 11 – 7 & 15

11-7



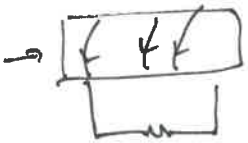
if moved closer → gets stronger – fight with ←



from b → a

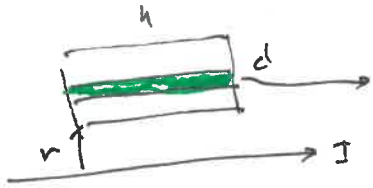
b) move current in A ⇒ move B → ; exactly as above

c) less current in A ⇒ B → weakens, coil B tries to maintain → B



a → b

11-15



area = $dx \cdot h$

$$B = \frac{\mu_0 I}{2\pi x}$$

$$\phi = \int_r^{r+d} \frac{\mu_0 I}{2\pi x} h\,dx = \frac{\mu_0 I h}{2\pi} \int_r^{r+d} \frac{dx}{x}$$

$$= \frac{\mu_0 I h}{2\pi} \ln\left(\frac{r+d}{r}\right)$$