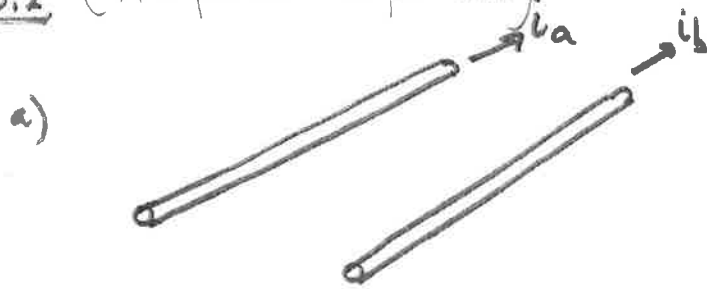


EX 8.2 (Ampere's experiment)



$$B = \frac{\mu_0 i_b}{2\pi r_{ab}}$$

b)

$$f = \frac{\mu_0 i_a i_b}{2\pi r_{ab}}, \text{ since } f = i_a B$$

c)

$$f = \boxed{10 \text{ dynes}}, \text{ or } \boxed{0.0001 \text{ Newtons}} \text{ (on each meter of wire)}$$

The force is repulsive if the currents are in opposite directions and attractive if the forces are in the same direction.