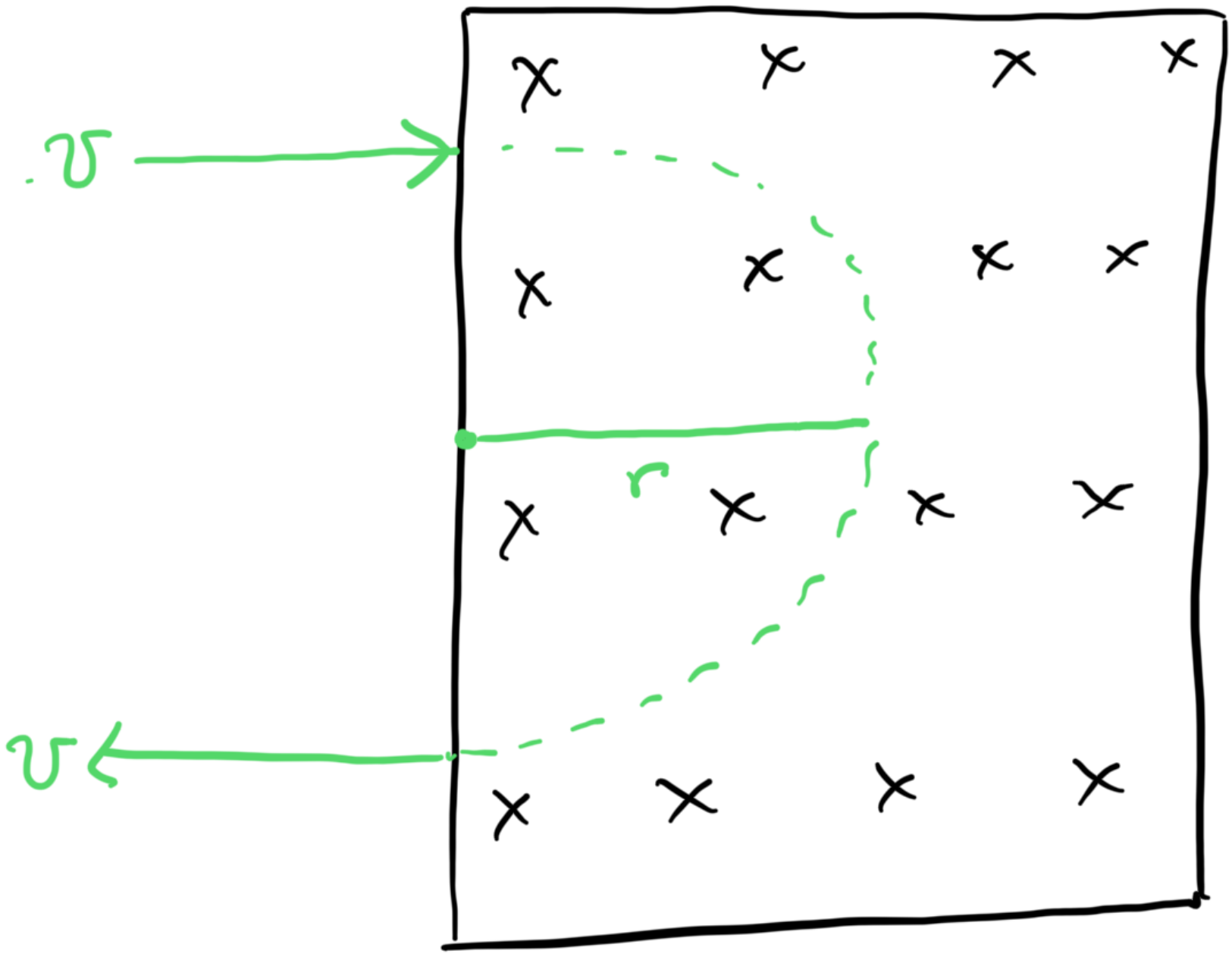
6.



$$r = \frac{m v}{q B}$$

$$v = \left(\frac{q B}{m}\right) r$$

Time ?

$$dist = v \cdot t$$

$$\therefore t = \frac{dist}{v} = \frac{\pi r}{\left(\frac{q B}{m}\right) r}$$

$$\boxed{t = \frac{\pi m}{qB}}$$

$$= 1.86 \times 10^{-8} \text{ s}$$

b) $r = 2 \text{ cm} = 0.02 \text{ m}$

$$v = \left(\frac{qB}{m}\right) r$$

$$= \underline{\underline{3.376 \times 10^{6} \text{ m/s}}}$$

$$E = \frac{1}{2} m v^2 = 5.19 \times 10^{-18} \text{ J}$$

$$= \underline{\underline{32.4 \text{ eV}}}$$