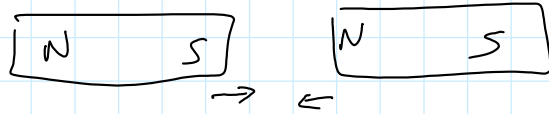


Magnetism

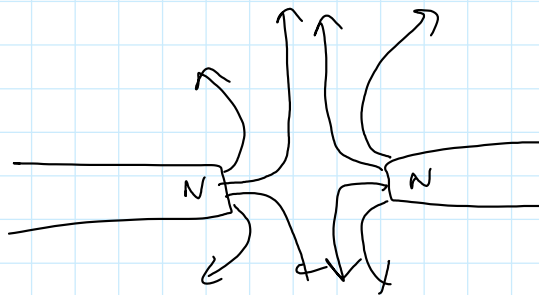
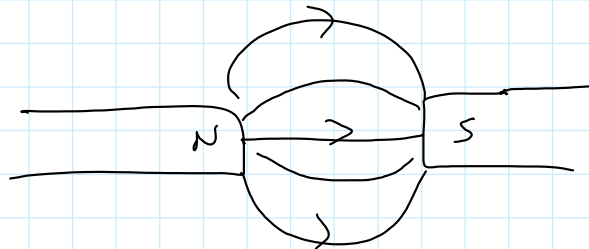
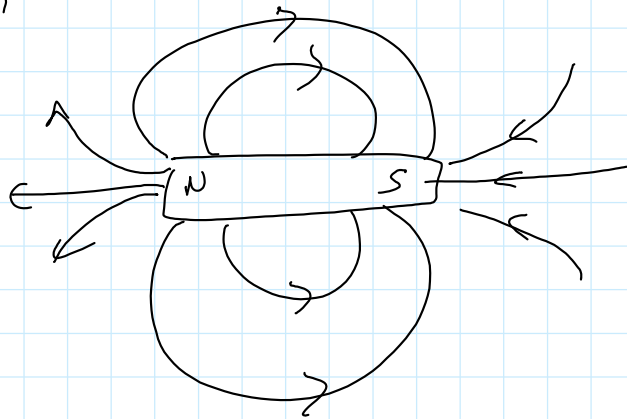


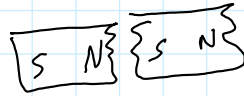
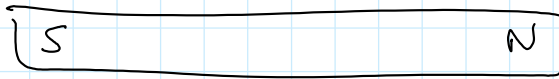
like poles repel



opposites attract

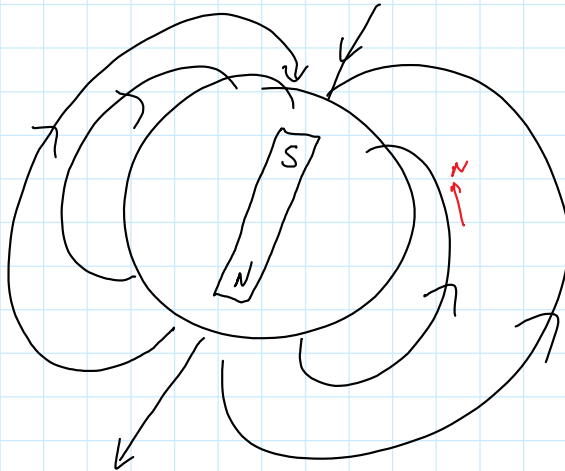
Field Lines



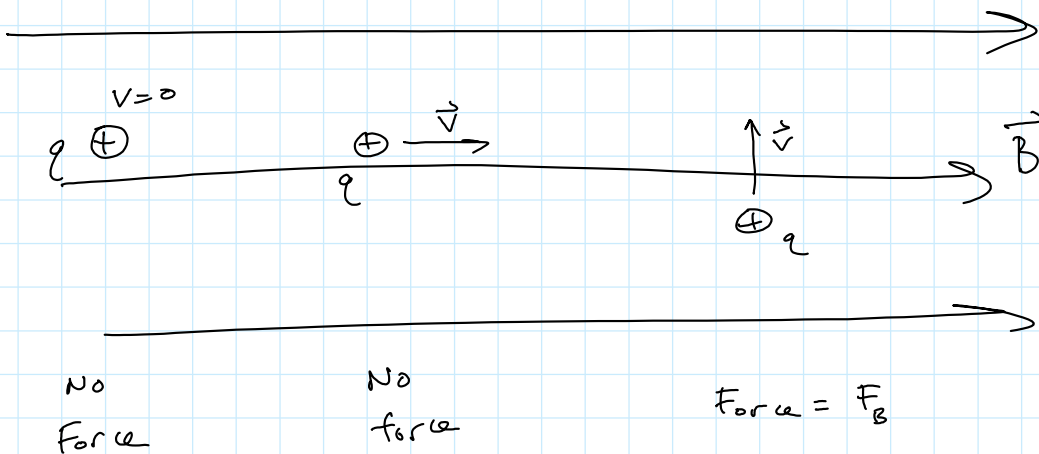


always get both N and S poles

Earth



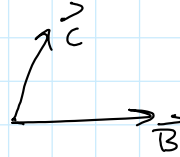
How are charged particles affected by magnetic fields?



$$\vec{F}_B = q \vec{v} \times \vec{B}$$

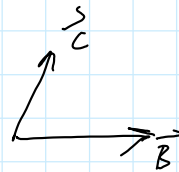
direction by
Right hand rule

$$\vec{A} = \vec{B} \times \vec{C}$$



\vec{A} is out of page

$$\vec{A} = \vec{C} \times \vec{B}$$



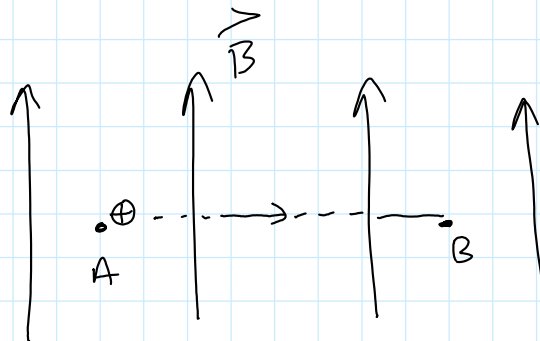
\vec{A} is into page

units : tesla (T)

$$1 \text{ T} = 1 \frac{\text{N}}{\text{C} \cdot \frac{\text{m}}{\text{s}}} = 1 \frac{\text{N}}{\text{A} \cdot \text{m}} = 10^4 \text{ G}$$

SI unit ↑ gauss

Work:



$\vec{F} \perp \vec{v}$ so, the magnetic field can not do work

W by B field is always zero
it can't change the charges speed

"cannot" ,
it can only change its direction

⊙ means out of page

⊗ means into the page

\vec{B} (into page)

