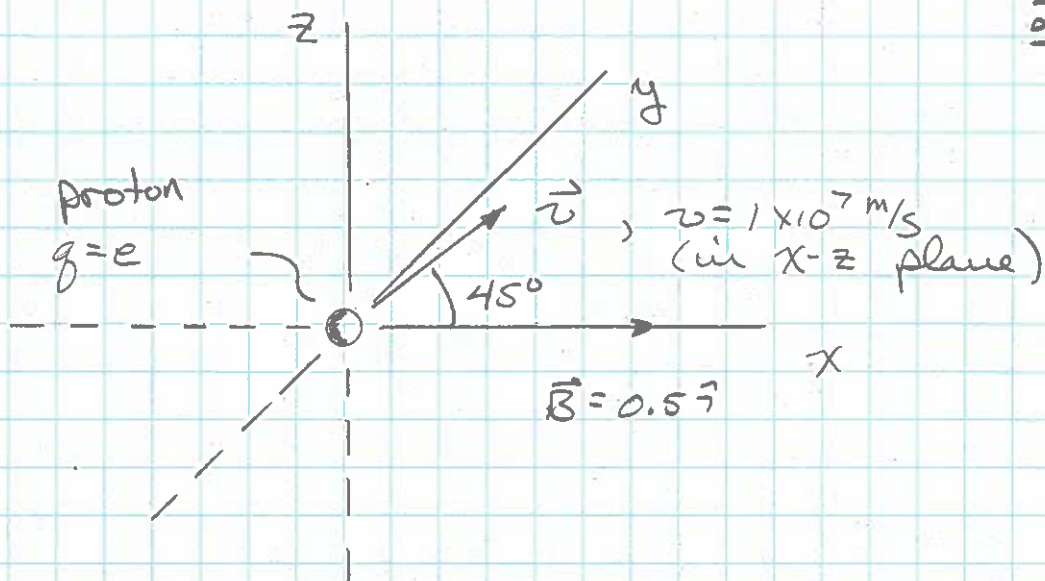


a.)



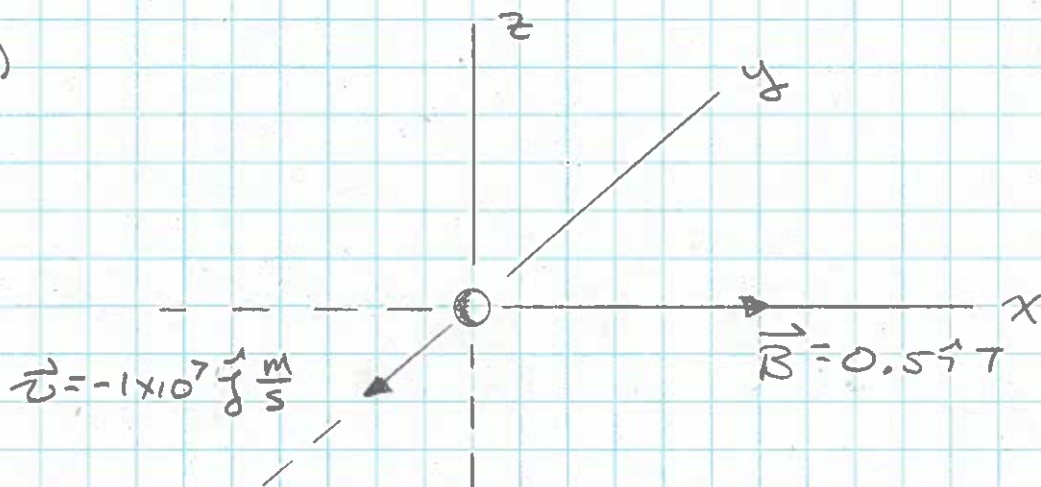
$$\vec{F} = q \vec{v} \times \vec{B}$$

$$|\vec{F}| = e v B \sin 45^\circ = 5.657 \times 10^{-13} \text{ N}$$

RHR  $\Rightarrow \vec{F}$  is in  $+y$  direction

$$\text{So, } \underline{\vec{F} = 5.657 \times 10^{-13} \hat{j} \text{ N}}$$

b.)



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

$$|\vec{F}| = e v B \sin 90^\circ = 8 \times 10^{-13} \text{ N}$$

RHR  $\Rightarrow \vec{F}$  is in  $+z$  direction.

$$\text{So, } \underline{\vec{F} = 8 \times 10^{-13} \hat{k} \text{ N}}$$