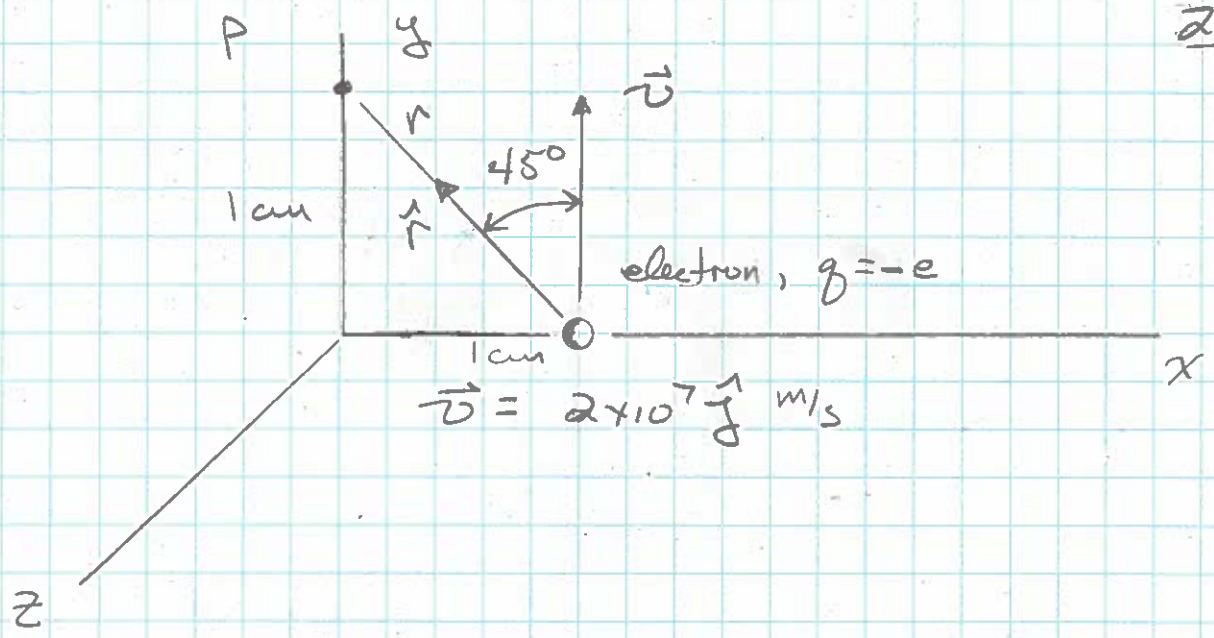

at P: $\vec{B} = \frac{\mu_0}{4\pi}\frac{q\vec{v}\times\hat{r}}{r^2} = -\frac{\mu_0}{4\pi} e\vec{v}\times\hat{r}$

$r^2 = \sqrt{.01^2 + .01^2} = 1.414\times10^{-2}$ m

$q = -e$

$|\vec{v}\times\hat{r}| = |\vec{v}||\hat{r}|\sin 45^\circ = v\sin 45^\circ$

Direction, RHR $\Rightarrow$ into page
$q\vec{v}\times\hat{r}$ or in +z direction

So: $|\vec{B}| = \frac{\mu_0}{4\pi}\frac{ev\sin 45^\circ}{r^2} = 1.138\times10^{-15}$ T

Direction by RHR:

$\vec{v}\times\hat{r} \Rightarrow$ +z direction

but, $q\vec{v}\times\hat{r} = -e\vec{v}\times\hat{r} \Rightarrow$ -z direction

$\therefore\ \vec{B} = -1.138\times10^{-15}\hat{k}$ T