

Summary for Test 5

- \vec{D}, \vec{E} via Gauss's law then $W = \frac{1}{2} \int \vec{D} \cdot \vec{E} \, d\tau$
- Separation of Variables using bound. cond. for V and $\epsilon \frac{\partial V}{\partial n}$
- $\vec{F}_{\text{mag}} = q \vec{v} \times \vec{B}$ simpler case & cycloids

- $\vec{I}, \vec{K}, \vec{j}$ and corresponding \vec{F}_{mag}

- Bio Savart $\vec{B} = \frac{\mu_0}{4\pi} \int \frac{I \, d\vec{l} \times \vec{r}}{r^2}$ etc. for \vec{K}, \vec{j}

& \vec{F}_{mag}

- Ampère's Law $\oint \vec{B} \cdot d\vec{l} = \mu_0 I_{\text{enc}}$

NOT: \vec{A} , bound. cond. for \vec{A}, \vec{B} , multipole expansion (incl. magnetic dipole)