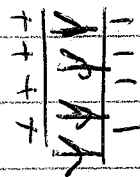
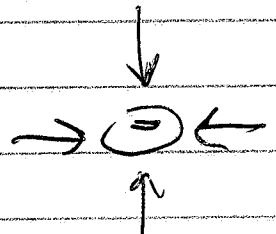
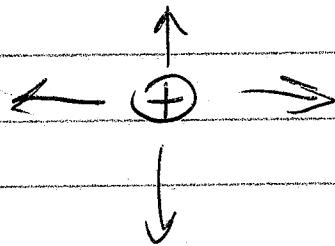


Magnets! Generators of magnetic Field.

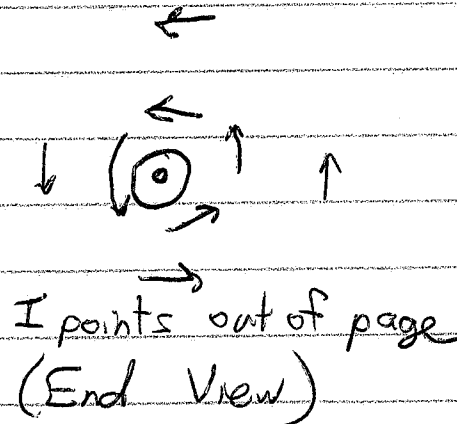
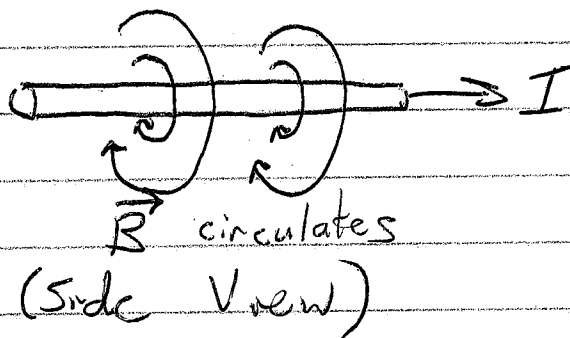
\vec{E} -Fields vs. \vec{B} -Fields

- Both are vector fields, like a virtual wind.
- Generated by sources.
 - E generated by charges
 - B generated by moving charges (i.e. currents)
- They can also generate each other.

Elec Fields



Magnetic Fields



RHR: Thumb is I , Curled fingers are \vec{B}

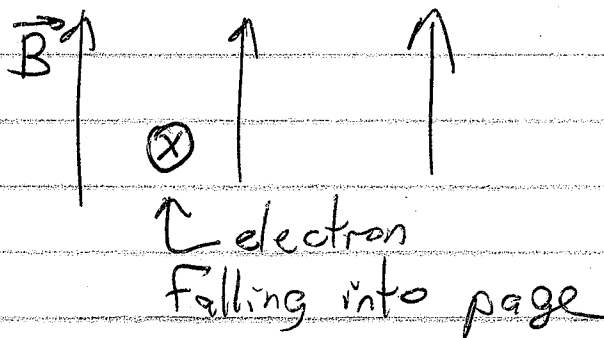
②

Describing 3-D directions

<u>Geographic</u>	<u>Math</u>	<u>Paper</u>	<u>Relative</u>
E/W	+x, -x	R/L	R/L
N/S	+y, -y	Up/Down Top/Bottom	F/B
Up/Down Sky/Ground	+z, -z	Out/In ⊙/⊗	Up/Down

Ex: An electron is moving down in a magnetic field that points north. How are \vec{v} and \vec{B} related?

Map



They are perpendicular.