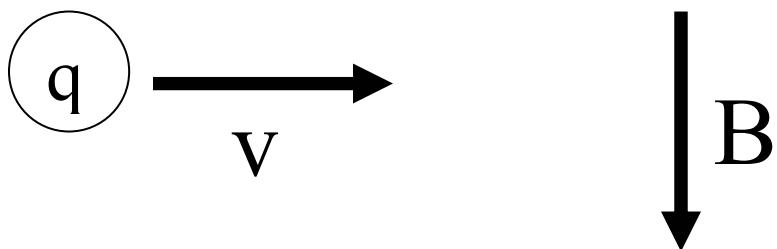


Practice Right Hand Rule #1

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

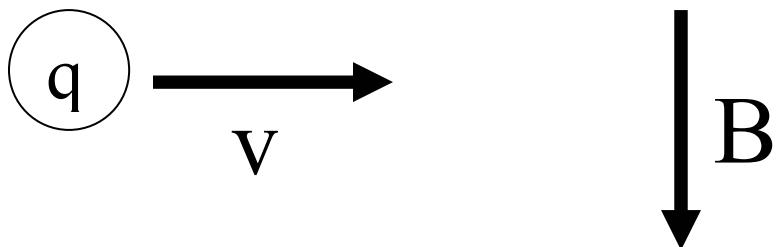
What direction is the force on a positive charge when entering a uniform B field in the direction indicated?



- 1) up
- 2) down
- 3) left
- 4) right
- 5) into page
- 6) out of page
- 7) there is no net force

Practice Right Hand Rule #1

(5) the force is into the page

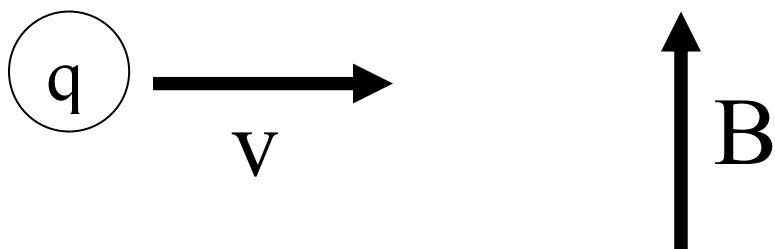


Using your right hand, thumb along v ,
fingers along B , palm into page

Practice Right Hand Rule #2

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

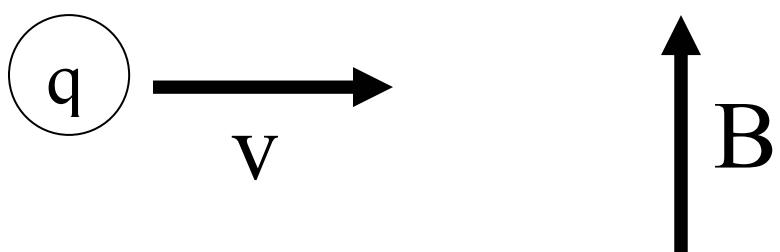
What direction is the force on a positive charge when entering a uniform B field in the direction indicated?



- 1) up
- 2) down
- 3) left
- 4) right
- 5) into page
- 6) out of page
- 7) there is no net force

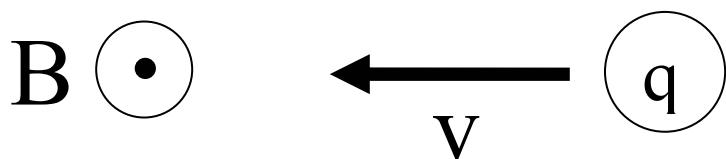
Practice Right Hand Rule #2

(6) Force is out of the page



Practice Right Hand Rule #3

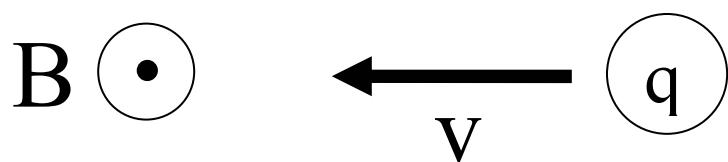
What direction is the force on a positive charge when entering a uniform B field in the direction indicated?



- 1) up
- 2) down
- 3) left
- 4) right
- 5) into page
- 6) out of page
- 7) there is no net force

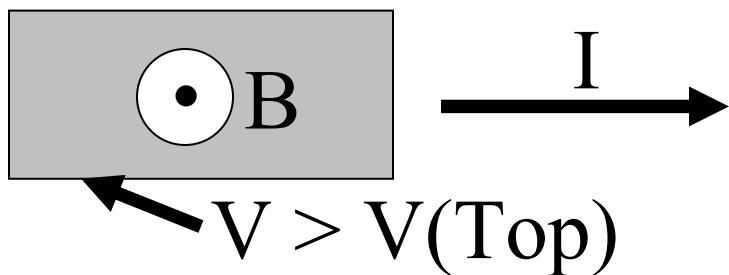
Practice Right Hand Rule #3

(1) The force on the positive charge is up



Hall Effect

A conducting slab has current to the right. A B field is applied out of the page. Due to magnetic forces on the charge carriers, the bottom of the slab is at a higher electric potential than the top of the slab.

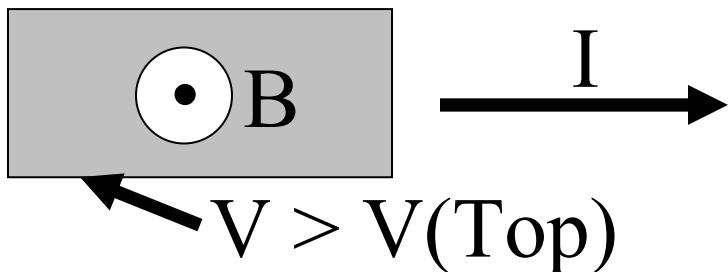


On the basis of this experiment, the sign of the charge carriers that make up the current in the slab is:

- 1) positive
- 2) negative
- 3) cannot be determined

Hall Effect

(1) The carriers are positive



Look at the force on the carriers. If positive, they are flowing to the right, and $\vec{F}_B = q\vec{v} \times \vec{B}$ will be down. If negative they are flowing to the left and $\vec{F}_B = q\vec{v} \times \vec{B}$ will be down (don't forget the sign of q !) So either way the force is down. But we know that the result is a higher potential at the bottom – positive charges are moving down. So the carriers are positive