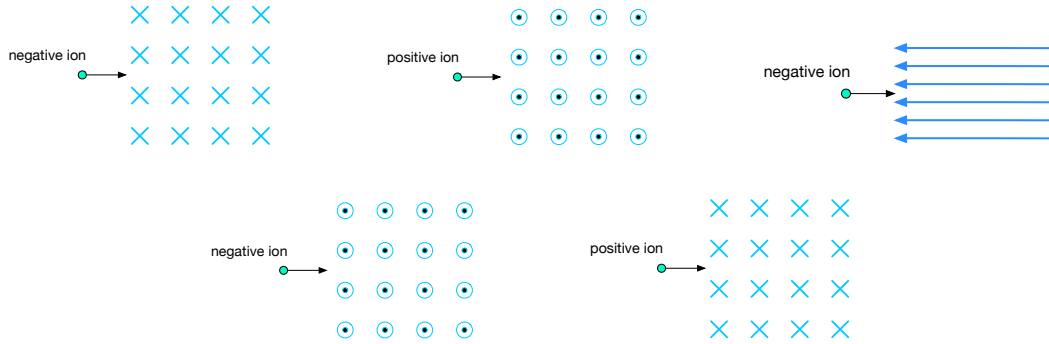


**Magnetic Forces Exerted by
Magnetic Fields on Charged Particles**
Physics II

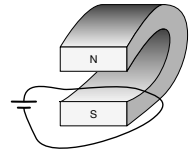
Name _____

Date _____ Period _____

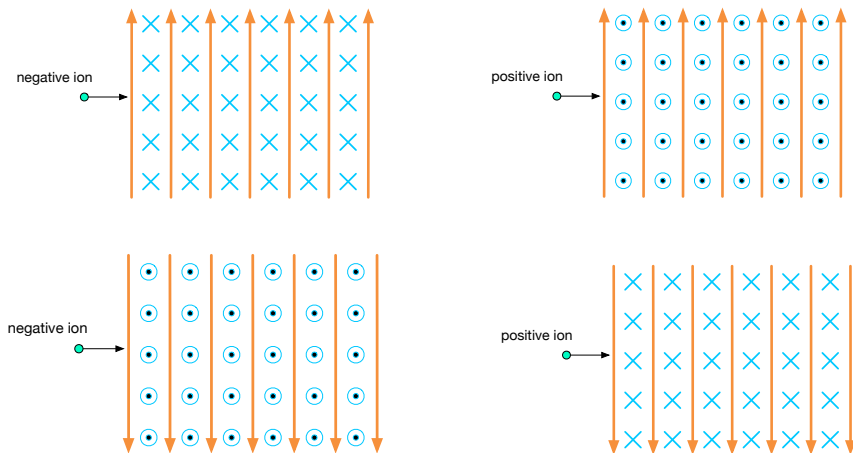
1. A charged particle approaches a region of uniform magnetic field in each of the five diagrams below. Sketch a vector to show the direction of the magnetic force that acts on each charged particle at the moment it enters the magnetic field shown.



2. Show or describe the direction of the force that the magnetic field of the horseshoe magnet will exert on the wire that passes between its poles.



3. Draw a circle around the two of these four “crossed” \mathbf{E} and \mathbf{B} fields that could serve as a velocity selector. The electric fields are up and down on the page while the magnetic fields are directed either into the page or out of the page.



4. An electric field has a strength of 1×10^6 N/C. A magnetic field is set up across this electric field. This magnetic field has a strength of 0.05 T. A beam of positive ions is shot through these crossed fields at a right angle to both fields, and a few make it through undeflected with their original velocity. How fast are these ions traveling?