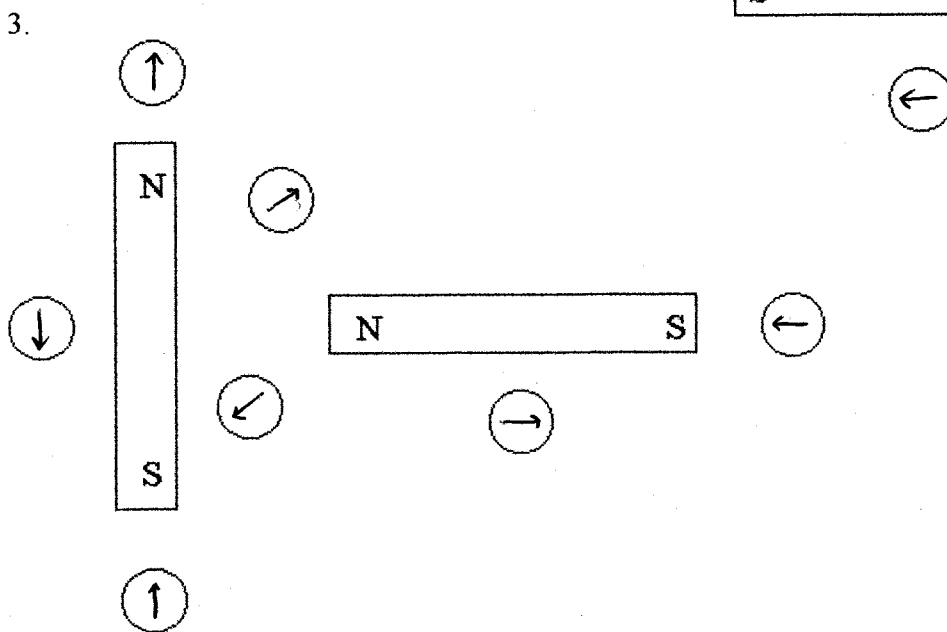
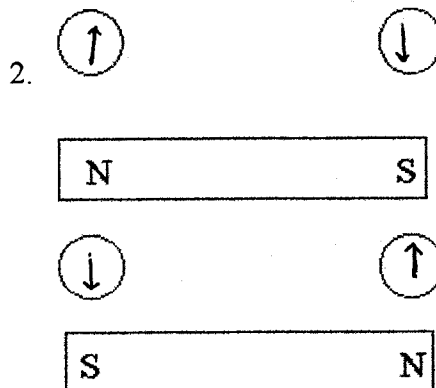
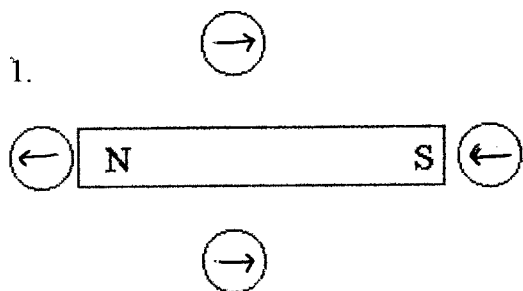
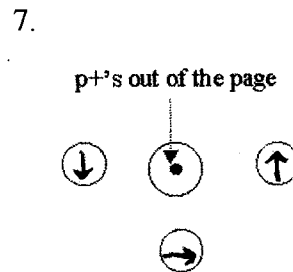
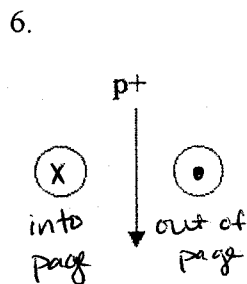
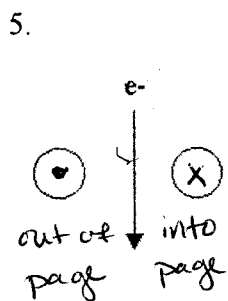
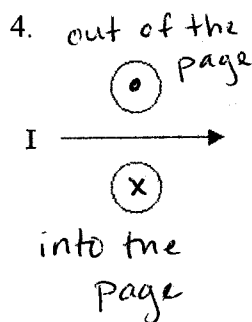


# Magnetic Fields Practice Worksheet - Solutions

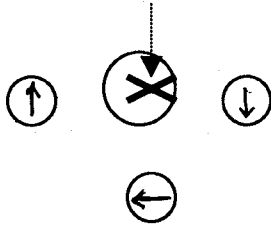
**Part 1:** Draw an arrow in the "compass" circles to designate the direction of the magnetic field at those locations near the permanent magnets:



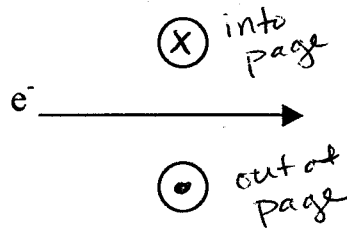
**Part 2:** Draw an arrow (or dot, or X) in the "compass" circles to designate the direction of the magnetic field at those locations near these moving charges and current-carrying wires (use right hand rule #1). Let circles with a dot in them represent direction out of the page and circles with an X in them represent direction into the page:



8. Current into the page

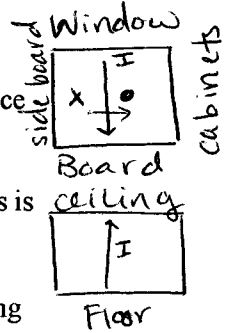


9.



10. Current in a wire moves from the back window to the front white board. A compass is placed underneath the wire on the floor, which way will it point?

*Toward the cabinets*



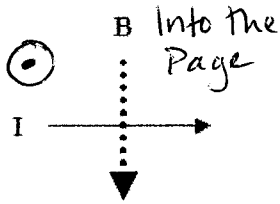
11. Current in a wire moves from the floor to the ceiling in the middle of the class. A compass is placed near the white board, which way will it point?

*Toward the cabinets*

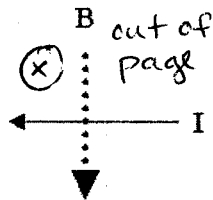


**Part 3:** State the direction of the magnetic FORCE on these moving charges or current-carrying wires when near these external magnetic fields (use right hand rule #2). Circles with a dot in them represent directions out of the page and circles with an X in them represent directions into the page. B is the letter that designates magnetic field:

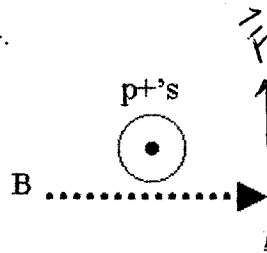
12.



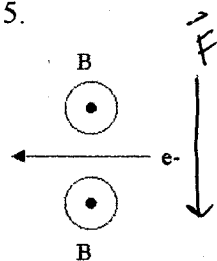
13.



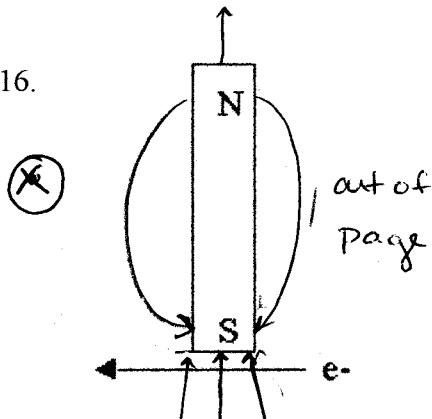
14.



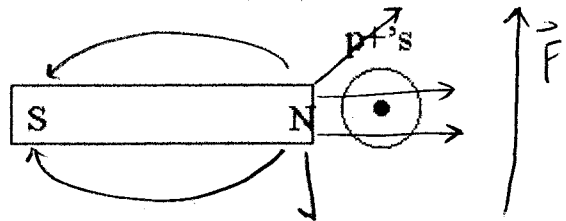
15.



16.

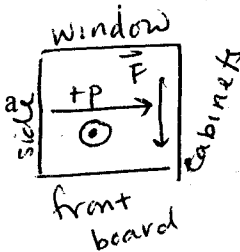


17.



18. Protons move from the side board to the cabinet wall while the floor of the room is a North Pole of a magnet. Which way are the protons forced to move?

*toward the front board*

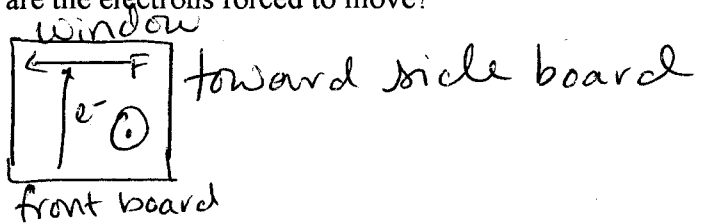


19. Current in a wire moves from the ceiling to the floor while the white board is the South Pole of a magnet. Which way does the wire move?

*field out of page to the left - toward side board*

20. Electrons move from the white board to the back window while the overhead screen is a South Pole of a magnet. Which way are the electrons forced to move?

*either B out of page or e- move parallel and F = 0 N*



*Field out of the page*

