A-day: Due Tues., May 1 (Assigned 4/27)
B-day. Due Wed., May 2 (Assigned 4/30)

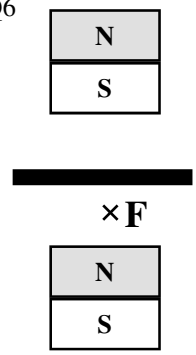
Magnetism 5

Q1,2

1. Show B around the above wires.
2. Are the two wires attracting or repelling?

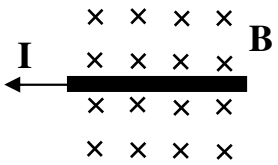
3. In the right hand rule, which part is the palm?
4. **<u>If I move a wire</u>,** is the force due to the magnetic field?
5. So, when I move a wire, what part of the right hand rule is the moving wire?

Q6



6. Use the above information to answer the following.
   A) I push a wire down into the page between the two magnets shown. Which part of the right hand rule is into the page?
   B) Find the direction the current will flow in the wire.

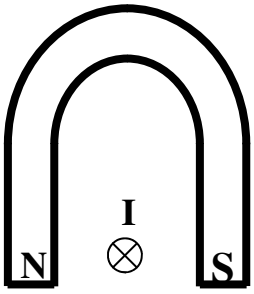
Q7



7. If a wire is moved in the given magnetic field that produces the given current, which direction was the wire moved?

8. Again, the current produced by moving a wire is shown. What direction was the wire moved?

Q8

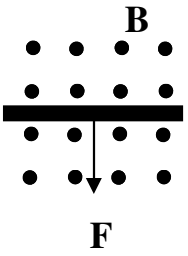


9. I had a pendulum made up of hanging magnets. I let the pendulum swing over sheets of copper and aluminum.
   A) Was the magnet attracted to either the copper or aluminum plates?
   B) Why or why not?

   C) When I let the pendulum swing what happened when it passed over the plates?

   D) Why?

Q10



10. In the diagram at the right, a wire is pulled downward thru a magnetic field. Which direction is the current going to flow in the wire?

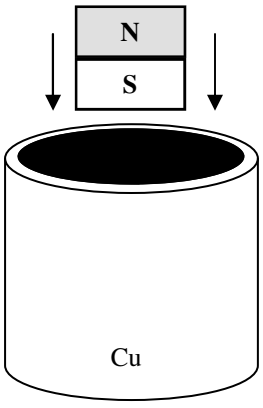
11. A magnet is dropped into a copper tube.
    A) Is the magnet attracted to the copper?
    B) What force pulls down on the magnet?

    C) What is the acceleration due to gravity?

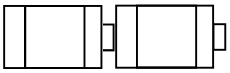
    D) Does the magnet drop faster or slower than the acceleration of gravity?

    E) Why?

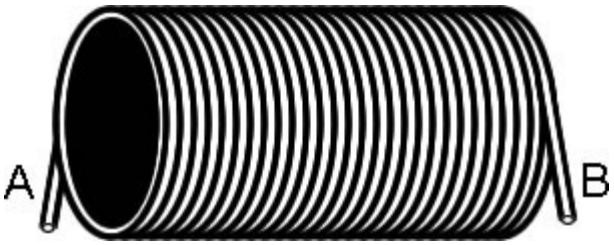
Q11



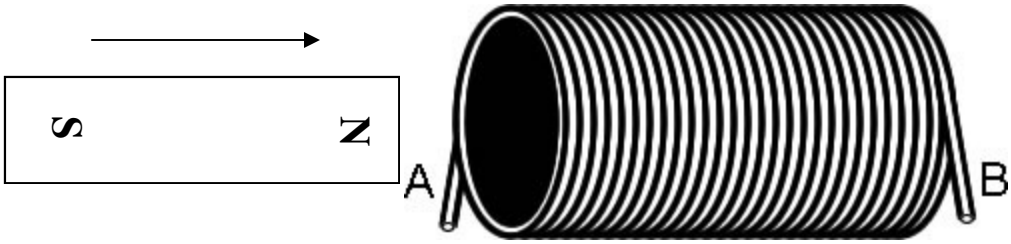
Magnetism 5



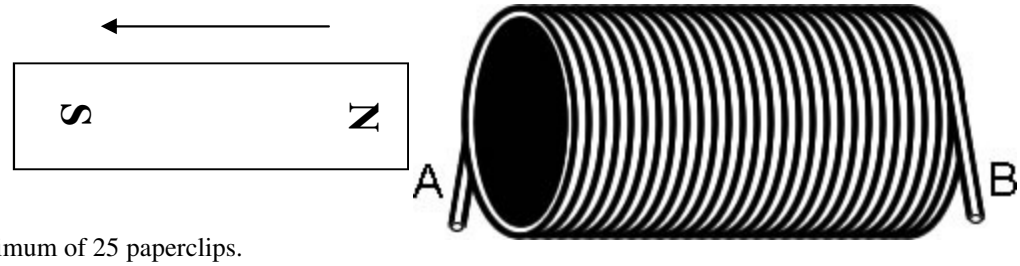
12. You are going to use two batteries to create a magnetic field in a solenoid.
    A) Mark the positive and negative side of the two batteries.
    B) Are the batteries in series or in parallel?
    C) Draw wires from the batteries to the solenoid to create a north pole at the right of the solenoid.



13. A bar magnet is moved into a solenoid.
    A) Since a north is being pushed into the solenoid, what magnet will the solenoid create?
    B) Using what you just found, from which end of the solenoid will the electricity come out?



14. When the bar magnet is pulled out of the solenoid, from which end will the electricity come out? *(Use the same logic as before.)*



15. An electromagnet can lift a maximum of 25 paperclips. If 40 paperclips is 16 grams, Find the maximum F_{mag} of the electromagnet.

16. If I put 24 volts of DC current to the transformer, what voltage would I get out?
17. Which side has the most loops?
18. Which side will have the least voltage?
19. If I want to make it a step-up transformer, on which side would I put the input voltage?
20. The side on which I put in voltage is the _____.
21. The side on which I get out the changed voltage is called the _____.
22. If I want to make a step-down transformer, which side would be the secondary?
23. The square is made of what?
24. If I put 120 VAC on a transformer with 20 loops on the first side and there are 110 loops on the other side, how much voltage will come out?