A-day: Due Fri., May 11 (Assigned 5/9)
B-day. Due Mon., May 14 (Assigned

Magnetism 8

Q1

Not going to spend much time on right-hand rule.
*We've worked on it for almost 3 weeks. You either need in for help or use the website.*

1. Use the diagram at the right to answer the following.
    A) The loop has electricity going around in a circle as shown. What does a coil of electricity make?
    B) What is the direction of the north pole of the coil?
    C) North poles are attracted by _____.
    D) North poles are repelled by _____.
    E) So, which way will the coil turn?
    F) This set up is the simplest example of a _____.
    G) Once the coil turns if the electricity stays on, will the coil keep turning or stay attracted to the magnets?

Q2,3
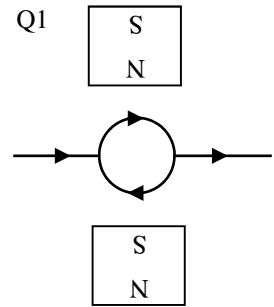
2. A loop of wire is turned in between two magnets as shown at the right.
    A) Is the moving loop the force or the charge (q) for the right-hand rule?
    B) If the loop is turned clockwise as shown, will the current come out end A or end B?
    C) If the loop is turned counterclockwise (not shown), will the current come out end A or B?
    D) Comparing the loop when it is horizontal and when it is vertical, which position produces the most emf (induced voltage)?

Q2,3

3. A motor turns because p_____ m_____ interact with t_____ e_____ m_____. These create m_____ f_____, which turn the motor.
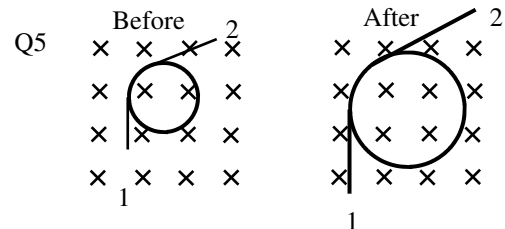
4. How does a motor keep moving?

Q5   Before   After
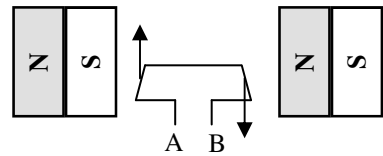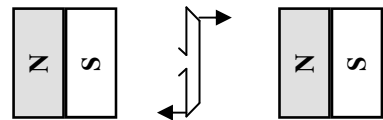
5. A loop of wire is changed in the magnetic field,
    A) Is an emf produced in the loop?
    B) Give the variable from the emf equation that was changed.
    C) Was the change positive or negative?
    D) Which direction will the electricity flow in the loop?
    D) Which side will electricity come out?

6. A) How many grams in a kilogram?   B) 140 g is how many kilograms?

7. A) If 12 pieces of candy costs $.85. How much does 1 piece cost?

    B) How much does 40 pieces of candy cost?

8. A) How do you go from mass to weight?   B) What is the weight of a 13 kg object?

9. (*If you were able to do all of the above, this should be easy*.)
    If 35 paperclips is 15.8 g and if a magnet can lift 20 paperclips, find the magnetic force applied by the magnet.

10. A solenoid with 45 loops of area 0.32 m^2 have a magnet moved out from it. This causes the magnetic field to change from 35 T to 12 T in 0.5 seconds.
    A) Find the emf caused by moving out the magnet.

    B) How much resistance does the solenoid have if 2.1 amps flow thru the solenoid.
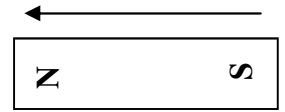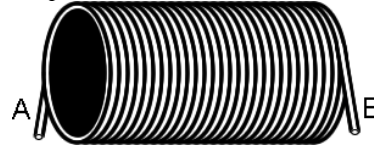
Q 11, 12

11. Apply the electricity to the solenoid so that the N pole is to the left.

12. On the solenoid, if I put the negative terminal to A, which way will the South pole be?
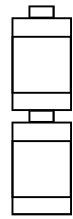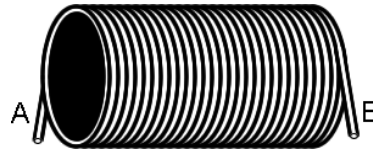
13. A) A North pole is put into the solenoid, which induces a magnet with a N pole going which direction?
    B) Which direction will the electricity come out?

Q13

14. A) When the magnetic is moved into the _____ describe the direction of the induced magnet.
    B) So, which direction will the current come out?
    C) If side A is connected to the positive side of an ammeter, will the ammeter read positive or negative?

Q14
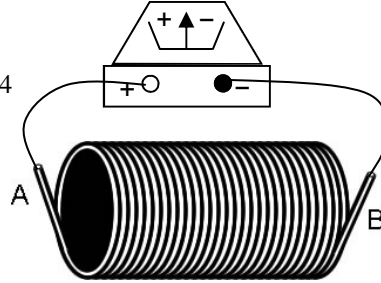
15. The point of a compass points towards what pole of a magnet?

16. If a compass points towards geographic north, then geographic north is what pole of the earth's internal magnet?

17. Where does the earth's internal magnet come from?

18. Why is the earth's magnetic field important for life on our planet?

19. A) To make it a step-down transformer, which side is the primary?
    B) To make it a step-up transformer, which side is the secondary?
    C) What happens if you use DC current?

20. A) If I put AC voltage on the right of the device, which is the primary?
    B) If I put voltage on the left side, which side is the secondary?
    C) If I put voltage on the right side, would it increase or decrease voltage?

20 loops

100 loops

21. If I put 50 V AC on the left, what voltage will I get out on the right?
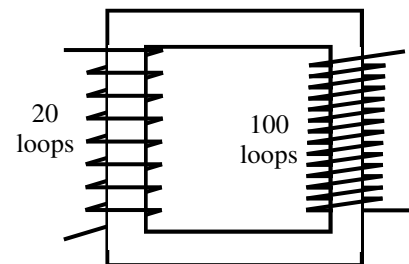
22. Using your answer from above, if the input current is 6 amps, what will be the output current?