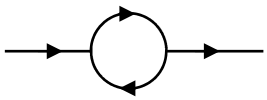
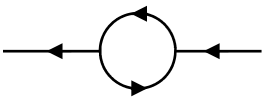
A-day: Due Fri., May 23 (Assigned Wed, May 21)
B-day: Due Tues., May 27 (Assigned Thurs., May 22)

2008 Magnetism 7 - Test Review

I am not going to spend much time on right-hand rule. We've worked on it for almost 3 weeks. Either look at the in-class reviews, come in for help or use the website.





1. A. Current is flowing in the above wire and loop of wire. Which direction does B point inside the loop?

   B. The current is then reversed, which direction is B now?

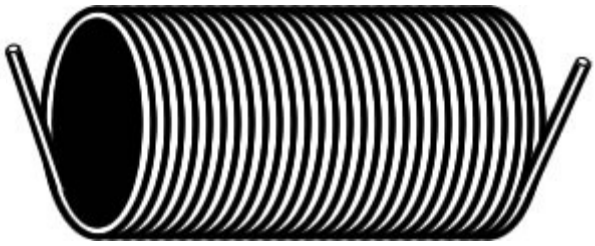
2. Attract, repel, or neither?
   A. ___ A magnet to a piece of iron.
   B. ___ A magnet to an electron.
   C. ___ A magnet to a piece of aluminum.
   D. ___ A compass to the earth's magnetic field.
   E. ___ A N pole to the red part of a compass.

3. Permanent, Temporary, or Electro-Magnet?
   A. ___ A loop of wire with electrons flowing in it.
   B. ___ A magnet that's poles cannot be switched.
   C. ___ A piece of iron with a donut magnet touching it.
   D. ___ Part of a motor that doesn't need electricity.
   E. ___ Can amplify another magnet.

4. How is a generator different than a motor?

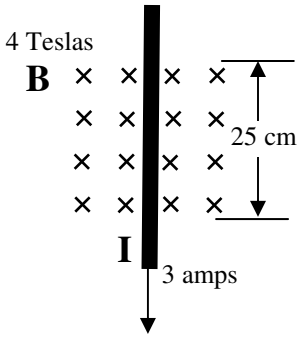
5. Give three ways to strengthen an electromagnet?
   1.
   2.
   3.

6. A. What is the multiple coils of wire at the right called?
   B. If positive current flows into the left side, which side is its S pole?
   C. Draw the magnetic field lines around it.



7. A neutron is moving 25 m/s in a 8 T magnetic field, calculate the force on the neutron.

8. A negative object is moving 3 m/s in a 0.25 T magnetic field. If it feels 18 N pulling it, what is the charge on the object?



9. A battery pushes current thru a wire that is already inside a magnetic field.
   A. Find the direction the force will deflect.

   B. Given the parameters (numbers) at the left, calculate the force on the wire.

10. Be sure you know the materials on the first homework.

Studying for the Final (and, yes, everyone needs to do this part).

11. A. Of the pairs of objects below, show the direction heat will move.

25°	35°

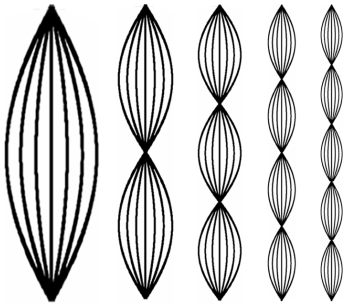
35°	35°

40°	35°

B. So, heat is energy transferred between objects of different _____.

Notes you need: Waves; Standing Waves

12. The diagram at the right shows the first five harmonics of the same string.
    A. Label the frequencies of the different harmonics.
    B. If the string's tension and length stays the same, how does the speed of the wave for each harmonic compare (higher, lower, same, etc).



16 Hz

13. A different piece of string is tied at one end and is vibrated at the other end.

30 Hz

.2 m

A. Mark a node and an antinode on the string above.
B. Mark one wavelength on the string above.
C. What is the wavelength of the above string?
D. Calculate the wave speed of the string.

E. The same string is then vibrated slower. What is the frequency of the string, now (*same process as Q12*).
F. What is the speed of the wave?

G. Calculate the wavelength of the string the second time.

H. So, if the frequency goes down, the wavelength goes _____.

14. If one sound has a frequency of 460 Hz and a second has a frequency of 464 Hz.
    A. Will these two frequencies sound good or bad if played together?
    B. How many beats will be produced?

    C. These beats are due to constructive or destructive interference?