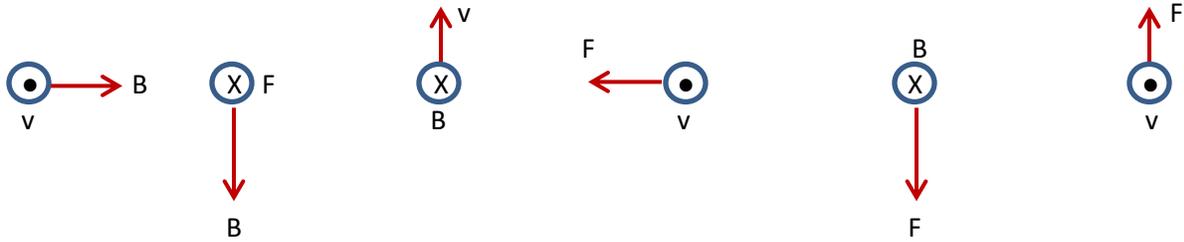Directions: Using only the right/left hand rules, solve each of the below questions.
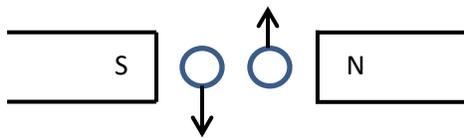
1. In the wires below determine the unknown (?) direction and indicate with "left", "right", "up", "down", "into paper", or "out of Paper".   2pts each
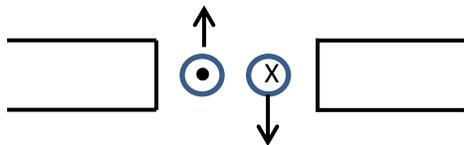
v=pos   v=neg   v=neg   v= pos   v=pos   v=neg

a) F?   b) v?   c) F?   d) B?   e) v?   f) B?

_____   _____   _____   _____   _____   _____

2.   In the electric motors below, complete each diagram for the unknown. 2 pts each.
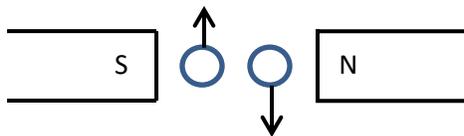
S   N   Draw the conventional current (pos)

Label the magnets based on conventional current (pos)
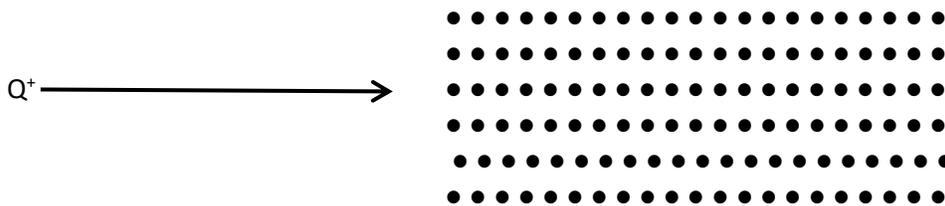
N   S   Draw the force arrows on the wires based on conventional current (pos)

S   N   Draw the modern current (neg)

3. In the diagrams below sketch the path of the charge moving through the magnetic field. 2 pts.

Q⁺

4. In the diagrams below, determine the direction of the current that is flowing in the wires. Does the current flow <u>into</u> point "A" or <u>out</u> of point "A". 2 pts each
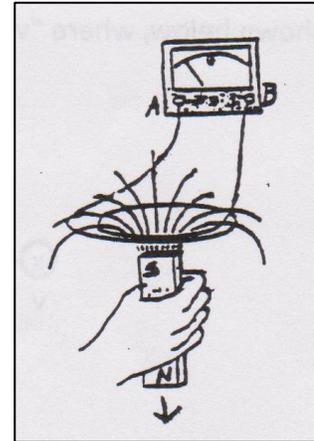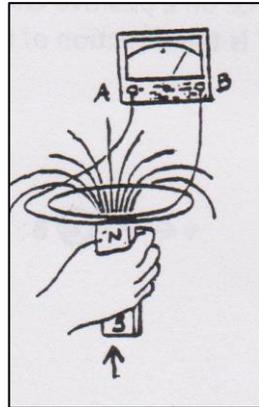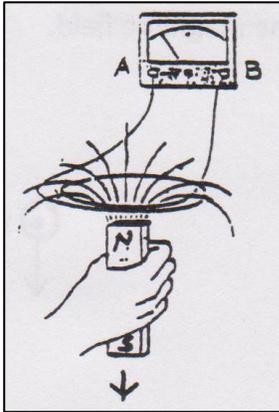
a. conventional current (+)   b. modern current (-)   c. conventional current (+)

Pt. A _____("In" or "out")   Pt. A _____("In" or "out")   Pt. A _____ ("In" or "out")

5. An electron is accelerated through a potential difference of 3000 Volts (emf). What is the strength of the magnetic field if the radius of its path is 7.8 mm? 5 pts.

6. 180 V goes into 300 coils. 270 V comes out of the transformer. The power is 7.2 kW. Fill in the table below for this transformer. 4 pts

	Primary	**Secondary**
Voltage		
Current		
# of Coils		
Power		

7. Is this a step up or step down transformer? 3 pts