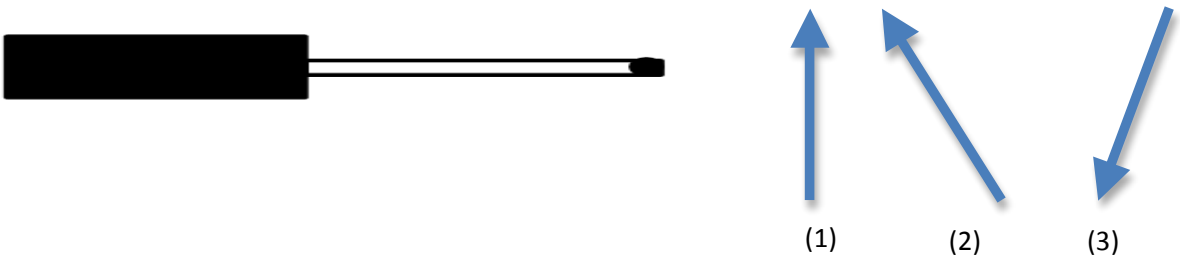
Physics 108	Homework # 4 Magnetic Field	FALL 2016

Name: _____ TA: _____

Day/Time: _____ Section: _____

1. Consider the magnetic field sensor shown with three different magnetic field vectors.



a) Draw the vectors indicating the **positive** direction of the **Axial** and **Radial** field on the magnetic sensor. Use your lab workbook as a reference. (1 pt)

b) For each magnetic field vector shown, identify the **sign** (+ or **-**) of the **axial** and **radial** components. (2 pts)

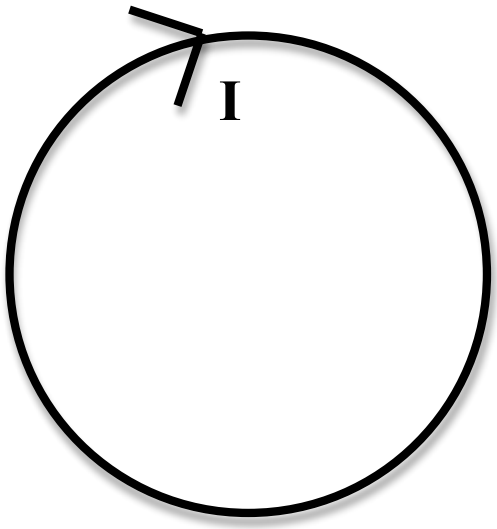
(1) Axial: Radial:

(2) Axial: Radial:

(3) Axial: Radial

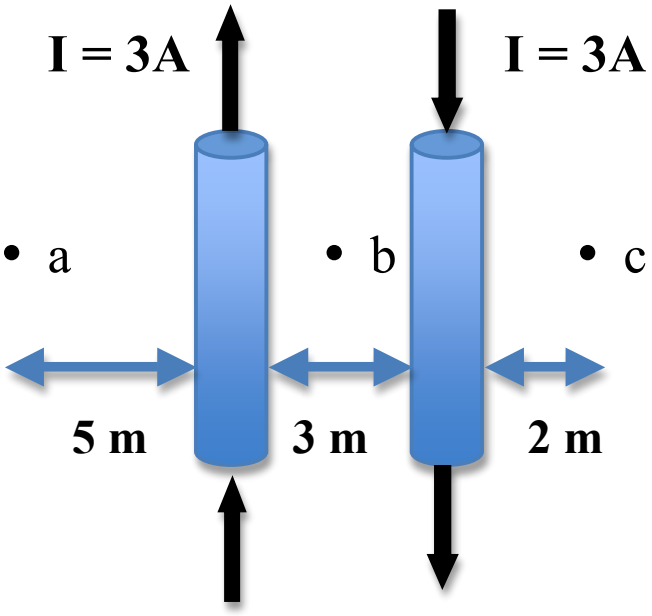
2. Sketch the magnetic field lines, both inside and outside the magnet. (2 pts)

3. (a) Current travels clockwise through a loop. Sketch the **direction** of the magnetic field around both sides of the loop (use ⊙ (out of page), ⊗ (into the page)). (2 pts)



(b) Two wires carry 3 A in opposite directions, as shown. Calculate the **magnitude** and **direction** of the magnetic field at each point.

(1) Point a:



(2) Point b (directly between wires):

(3) Point c: