

QUESTIONS TO HAND IN – EXPERIMENT 10

NAME _____

LAB INSTRUCTOR _____ LAB DAY/TIME _____

1. The magnetic field of the Earth can be modeled as being caused by a giant bar magnet lying along the Earth's axis. If this were true, what letter (N or S) would be printed on the end at the North Pole?
2. At our latitude, the Earth's field has both a horizontal and a vertical component. Which one are you sampling when you use a compass to find your way?
3. According to eqn. (2), the period T of a bar magnet that is oscillating in a magnetic field of strength B is inversely proportional to the square root of B . If such a magnet is observed to have a period of 2 s, what will be the period if B is increased by a factor of 4?
4. Why is it necessary to be careful about the location of the structural girders and beams in a building when making magnetic measurements?
5. According to eqn. (1), the torque τ on a bar magnet in a magnetic field is maximum at what angle between the magnet and the field?