Homework #7

Spring '19 Dr. Drake

- 1. Jackson 5.14: Calculate the magnetic fields everywhere. Skip the plots. For  $\mu \gg \mu_0$  and  $b a \ll a$  but with  $(\mu \mu_0)(b a) \gg \mu_0 b$  calculate the lowest order expressions for the magnetic field in the three regions. What is the size of the region where **B** is strongly affected by the cylinder. Estimate the magnetic field in the three regions based on simple physical arguments and check their consistency with your earlier expressions.
- Jackson 5.18a,c
  Hint: you can use the results of 5.17 and 5.10a.
- 3. Jackson 5.19a
- 4. Jackson 5.22