

# Physics 106C: Electromagnetism

## Homework 4: Magnetic Fields

**DUE: Thursday, May 10 2001**

Remember: Late homework will be granted 50% credit UNLESS PRIOR ARRANGEMENTS ARE MADE WITH ME OR A TA. If you have an extension, please indicate who granted it clearly on the top of the paper OR YOU WILL NOT GET FULL CREDIT. Note that for the rest of Phys106, you must solve integrals analytically, or by looking them up in a table, but you may not use Mathematica.

Reading Assignment: Jackson Chapter 5.1 - 5.7

Do Jackson problems 5.1, 5.3, 5.13, 5.11

A thin glass rod of radius  $R$  and length  $L$  carries a uniform surface charge  $\sigma$ . It is set spinning about its axis at an angular velocity  $\omega$ . Find the magnetic field at a distance  $r \gg R$  from the center of the rod.