

Homework 5

Due Thursday 3/11/2010 - at 5:00pm

Reading Assignment - Chapter 5

Griffiths' Problems

5.4

5.5

5.9

5.11

5.16

5.22 You only need to find the potential. You do not need to take the curl to find the field.

5.23

5.35

E1 A non-uniform current $\vec{J} = \gamma r^2 \hat{z}$ flows in the \hat{z} direction in the region $a < s < b$. γ is a constant. Compute the magnetic field everywhere.

E2 Compute the vector potential at the center of a square element of current $\vec{K} = K_0 \hat{y}$ where the current extends from $x = -a$ to a and $y = -a$ to a in the $x - y$ plane. K_0 is a constant. A good problem to convince you guys to learn Maple.