

Physics 8.07, Fall 1999
Homework #6

Reading for Tuesday, October 19: Griffiths, pp. 274–284

Reading for Thursday, October 21: Griffiths, pp. 285–321

Problem Set #6

Due **Thursday, October 21** by 9:30 AM in the 8.07 homework box in 4-339B.

1. An infinitely long cylinder of radius R centered along the z -axis has a uniform current density $\mathbf{J} = J\hat{z}$ moving parallel to the axis of the cylinder, except in a hollow cylindrical region of radius r whose center is displaced from the center of the larger cylinder by a vector \mathbf{a} ($a < R - r$, and $\mathbf{a} \cdot \hat{z} = 0$). Find the magnetic field everywhere in the hollow region. Compare your answer to that of problem 2 of Problem Set 2.
2. Griffiths, problem 5.16.
3. Griffiths, problem 5.39.
4. Griffiths, problem 5.58.
5. Griffiths, problem 6.3.
6. Griffiths, problem 6.7.
7. Griffiths, problem 6.13.