

PHYS 333 — Problem Set #17

Reading: Chapter 5.3 and 5.4

Reading Response: Due Monday October 27

The mathematical “heavy lifting” of generalizing the results we derived for straight-line currents occurs in Section 5.3.2. Read this section carefully and answer the following questions:

1. Prove either product rule number (6) or number (7) — your choice.
2. What are the two main results of this section?
3. What results of this section indicate that magnetic monopoles don't exist? Explain.
(Magnetic monopoles are point sources for magnetic fields, analogous to point electric charges, like electrons.)
4. Are there any parts of the derivations that you don't understand?

Problems: Due Wednesday October 29

1. Griffiths 5.14
2. Griffiths 5.15
3. Griffiths 5.16
4. Griffiths 5.17
5. Griffiths 5.19