

Physics 318, Spring 2008

Problem set # 7, Feb 25 – Feb 29

17. Prob. 6.10 (due Feb 27)

Hint: when $L \gg a$, you may treat the axial field of the torus as being the same as in an infinitely long solenoid; when $a \gg w$, you may treat the “gap” as a square loop wire (and find the “line” current in the loop). You may refer to Example 5.10 and Problem 5.8(a).

18. Prob. 6.12 (due Feb 29)

Hint: for part (a), you can derive the magnetic field as integral of fields generated by numerous solenoids with radius varying from 0 to R .

19. Prob. 6.16 (due Mar 3)