Homework 7 due 16 Oct. 2006 in class PH462 EM Waves and Optical Physics posted: 23 Oct. 2006

Reading: Heald and Marion (HM) chapter 8 and posted notes.

- 1) HM problem 8-6
- 2) HM problem 8-7. Important note: there is a typo in the figure, and the angle q is supposed to be the angle between segments QP and PR.
- 3) HM problem 8-8. Mathematica will help. For the second part, let  $\alpha = 1$   $\beta$ , and treat that as a small parameter to expand around.
- 4) HM problem 8-10. The result is equation 8.97. You may use mathematica to perform the integration.
- 5) HM problem 8-12.
- 6) HM problem 8-16. Use the standard Larmor formula (eqn 8.89) for the radiated power.