Please note that the homework for each week covers what we discuss in that week, while the deadline for turning the homework in comes a whole week later. Thus, this homework for week 5 is due at the end of week 6. The first quiz, on 5 February, will test material through chapter 24 of Halliday and Resnick, homeworks through week 4, and classes through the first half (roughly) of the lecture on Monday, 1 February. Homework 4, due at the quiz, is a little lighter than normal to give students more time to review. Because I like to give short tests (only three questions), your favorite topic may not be represented on the quiz. I apologize in advance; the best solace I can offer is the hope that you may find that topic on a future test.

I. Is it possible to set up an electric field around a circular loop such that the field always points counterclockwise (viewed from one side)? Both “yes” and “no” are appropriate answers to this question, depending on your assumptions. We’ll assume that an electric potential is a well-defined concept in this problem and that everything is in a steady state (independent of time).

II. How much energy (in your choice of Joules or ergs) would it take to accomplish problem 25.29P (I mean to do what the problem suggests, not to solve it). Assume a pre-1980s copper penny; recent pennies are mostly zinc.