

## PHYSICS 110B – HOMEWORK SET 1

Due Monday 4/5/04. Ten points per problem. Selected answers are provided.

Reading: Griffiths, Chapter 7 (review relevant sections).

- 1.) Consider a loop with resistance  $R$  threaded by a magnetic flux  $\Phi$ . Show that, when the flux is changed by an amount  $\Delta\Phi$ , the total charge that flows by any point on the loop is independent of the rate of change  $d\Phi/dt$  of the flux.
- 2.) Problem 7.24; ratio is  $1.05 \times 10^{-3}$ .
- 3.) Problem 7.31
- 4.) Problem 7.32
- 5.) Problem 7.34
- 6.) Problem 7.37; answer is 2.41