UNIVERSITY OF ALABAMA
Department of Physics and Astronomy

PH 125 / LeClair Spring 2009

Problem Set 7: Exam review

Instructions:

1. Solve all problems below.
2. You do **not need to follow the problem-solving template.**
3. **All problems are due 26 February 2009 just before the exam at 11am.**
4. You may collaborate, but everyone must turn in their own work

1. As shown below, a bullet of mass m and speed v passes completely through a pendulum bob of mass M. The bullet emerges with a speed of $v/2$. The pendulum bob is suspended by a stiff rod of length l and negligible mass. What is the minimum value of v such that the pendulum bob will barely swing through a complete vertical circle?

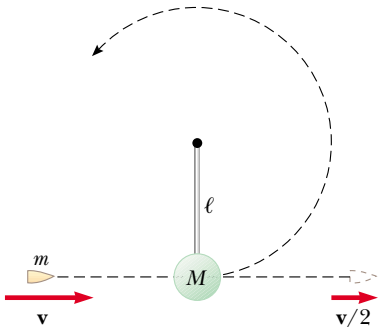

Figure 1: *A block is let go from the top of a ramp sitting on a table.*

2. A chain of length L and total mass M is released from rest with its lower end just touching the top of a table. Find the force exerted by the table on the chain after the chain has fallen through a distance x.

3. Halliday, Resnick, & Walker, problem 8.65

4. Halliday, Resnick, & Walker, problem 8.62

5. Halliday, Resnick, & Walker, problem 9.80

6. Halliday, Resnick, & Walker, problem 9.16

7. Halliday, Resnick, & Walker, problem 9.69