# PHY820 Homework Set 2

1. [10 pts] A smooth wedge of mass M has a triangular cross section with a side inclined at an angle θ to the horizontal base. The wedge can slide without friction along a horizontal support. Placed on the side of the wedge is a mass m that can slide with no friction along the side. Find vectors of the acceleration for the wedge and for m after the bodies are released from rest. The methodology is up to you.
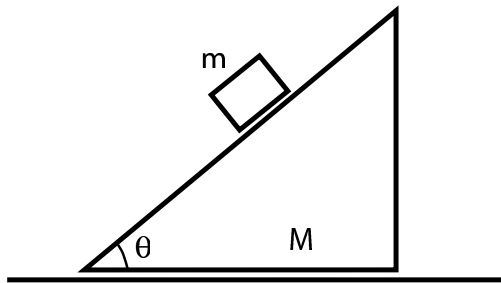
2. [5 pts] Goldstein, problem 1.4.

3. [5 pts] Goldstein, problem 1.6. This problem ends up being similar to 1.4.

4. [5 pts] Goldstein, problem 1.8.

5. [5 pts] Goldstein, problem 1.14. Note: The masses are *not* constrained to move in a plane, although the center of the rod is.

6. [5 pts] Goldstein, problem 1.19. The term 'spherical' indicates that the mass can move over the surface of a sphere, in distinction from a motion over the circumference of a circle.