Name: Physics 2A/Winter 2010 Quiz 7

Make sure to show all work in complete detail. NO CREDIT will be given if no work is shown!!!

- 1. A 100 g coin rests on a horizontal rotating platform. The platform makes 1 rev. each second. The coin is located 10 cm from the axis of rotation. (10 pts)
 - a) Calculate the frictional force on the coin.
 - b) If the coin begins to slide when r = 16 cm, calculate the coefficient of static friction.

2. A 5.0 kg block is moving on a horizontal, frictionless surface with speed V_o when it collides with a horizontal spring (K = 500 N/m). See figure below. The spring is compressed a maximum distance of 60 cm. (Hint: block stops at max. compression) (10 pts)



- a) Draw the Free-Body Diagram while the block is in contact with spring. (During compression)
- b) Calculate the work done on block by each force during compression of spring.
- c) Calculate the net work done on block.
- d) Calculate the initial speed V_o of block.