國立東華大學
Department of Physics
National Dong Hwa University, 1, Sec. 2,
Da Hsueh Rd., Shou-Feng, Hualien, 974, Taiwan

General Physics I, Quiz 3
PHYS10400, Class year 98
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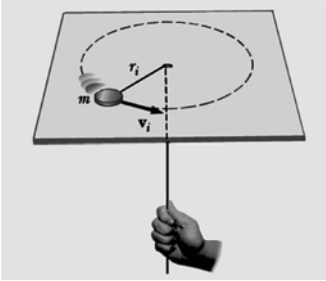
SN:_____, Name:_____

Chapter 10-11, Serway; ABSOLUTELY NO CHEATING!
Please write the answers on the blank space or on the back of this paper to save resources.

Chap. 11-prob.45
A puck of mass m is attached to a cord passing through a small hole in a frictionless, horizontal surface (Fig.P11.45). The puck is initially orbiting with speed v_i in a circle of radius r_i. The cord is then slowly pulled from below, decreasing the radius of the circle to r. (a) what is the speed of the puck when the radius is r? (b) Find the tension in the cord as a function of r. (c) How much work W is done in moving m from r_i to r? Note: The tension depends on r. (d) Obtain numerical values for v, T, and W when r = 0.100 m, m = 50.0 g, r_i = 0.300m, and v_i = 1.50 m/s.



Chap. 10-prob.63
Two blocks, as shown in Fig. 1, are connected by a string of negligible mass passing over a pulley of radius 0.250 m and moment of inertia *I*. The block on the frictionless incline is moving up with a constant acceleration of 2.00 m/s2. (a) Determine T_1 and T_2, the tensions in the two parts of the string. (b) Find the moment of inertia of the pulley.