

# 50pts) Take Home Quiz

## AP PHYSICS BOCCE BALL EXPERIMENT

Complete all answers in your notebook:

**25pts) Design and describe the experiment we are doing in class, use diagrams and formulas**

**25pts) Questions are 5 pts each:**

- 1) If a Bocce ball rolls off a table ramp that is 0.750m high and lands 0.22m from the base, what is its horizontal velocity?
- 2) If the ramp is placed on a carpeted floor, and rolls 1.18m past the ramp before coming to a complete stop, what is its acceleration?
- 3) What is the force of carpet static friction acting on the 1.00kg Bocce ball?
- 4) What is the coefficient of static friction ( $\mu_s$ ) for the carpet?
- 5) A red Bocce ball rolls down the ramp and it usually moves to 1.18m from the end of the ramp. You place a black Bocce ball, 0.500m in front of it. When they collide, the red ball stops and transfers its momentum to the black ball, which only travels 0.200m from the red ball. How much energy was lost to the collision if the black ball should have traveled to 1.18m?