

# PY105 Discussion Quiz 4

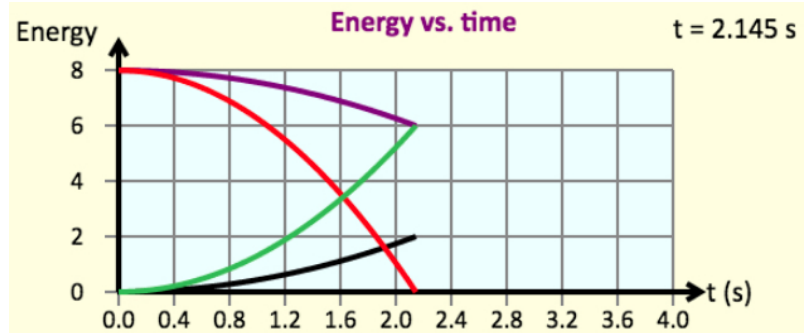
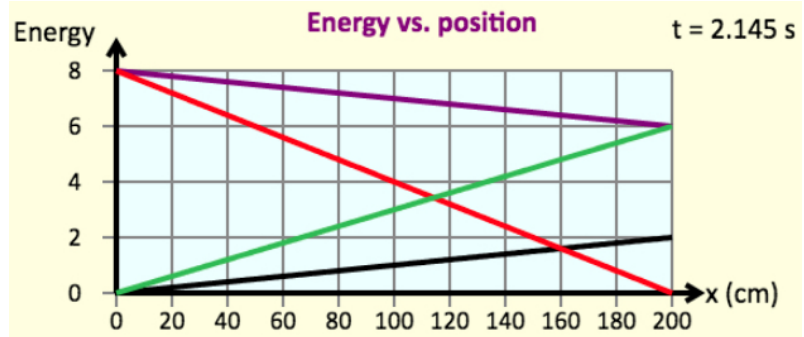
NAME: \_\_\_\_\_

Section: \_\_\_\_\_

Table: \_\_\_\_\_

- (a) [1 point] For **both graphs**, label the lines with “Mechanical,” “Potential,” “Kinetic,” and “Thermal.”

These graphs show energy as a function of position, and energy as a function of time, for a block sliding down a ramp, with friction. The block starts from rest, and the gravitational potential energy is defined to be zero at the bottom of the ramp.



*For part (b), use a ruler (or equivalent) to draw lines that are straight.*

- (b) [4 points] Another block, of the same mass as the first but with **3 times the coefficient of kinetic friction**, is then released from rest, sliding down the same ramp. Plot the energy vs. position and energy vs. time graphs for kinetic energy, potential energy, total mechanical energy ( $U + K$ ) and thermal energy in this case, labeling the lines as before. HINT: this block takes 3.72 s to reach the bottom.

