

Conservation of energy with cars (13 pts)

Graph - 4 pts

Axes labels and units - 1 pt

Regression line - 1 pt

Slope - 1 pt

6. percent dissipated (If K is on the y-axis and U is on the x-axis, this percent is one minus the slope. If the axes are switched, this percent is one minus the reciprocal of the slope) - 1 pt

7a. The slope would be one if no energy is dissipated. All of the initial potential energies would match the final kinetic energies - 2 pts

7b. Measure the table height and use  $y = \frac{1}{2}gt^2$  to find the time of flight. Divide the horizontal landing distance by this time to find the speed at which it leaves the table. Conservation of energy cannot be used to solve for this - 2 pts

7c. At any point along the ramp, the car has both kinetic and potential energy, so the average velocity down the incline does not indicate either - 1 pt