***Physics 210L***

**Conservation of Mechanical Energy**

|  |
| --- |
| *Grade:* |

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

Instructor: \_\_\_\_\_\_\_\_\_\_

**1. Elastic potential energy of a rubber band:**

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| Weights (N) |  |  |  |  |  |  |
| Displacement of glider in (m) |  |  |  |  |  |  |

Plot F (x) against x on a graph paper.

Work done to stretch the rubber band from the plot: . . . . . . . . . . . . . . . . . . . . . . .

Elastic potential energy of the stretched band : . . . . . . . . . . . . . . . . . .

**2. Work-Energy:**

Mass of glider . . . . . . . . . . . . . . . . . . kg

Length of glider . . . . . . . . . . . . . . . . . m

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| Trial |  I |  II |  III |  IV | V |
| reading of timer |  |  |  |  |  |
| speed of glider |  |  |  |  |  |
| Kinetic energy of glider |  |  |  |  |  |

Kinetic energy of glider: . . . . . . . . . . . . . . . . . . . . . . J

Compare with the result of part A and comment.

**3. Friction on the Track:**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Location of glider |  I |  II |  III |  IV |
| speed of glider in m/s |  |  |  |  |
| Kinetic energy of glider ( ) |  |  |  |  |

Estimate the force of friction: . . . . . . . . . . . . . . . . . . . . .

Calculate the coefficient of kinetic friction

Comment: