**Data Collection with a PC-I** Name:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  
Partner(s):\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Day/Time:\_\_\_\_\_\_  
**A. Introduction:**



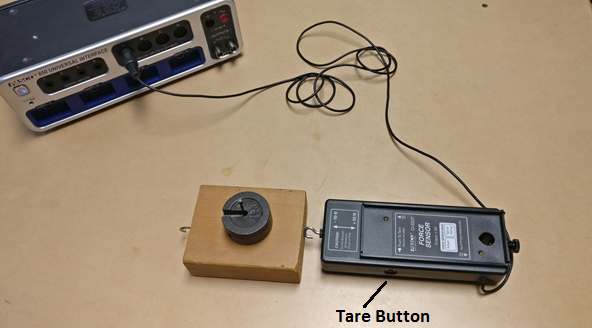
|  |  |
| --- | --- |
| Menu | Description |
| 1 |  |
| 4 |  |
| 6 |  |
| 7 |  |
| 8 |  |
| 9 |  |

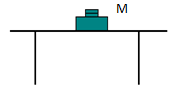
**B1. DATA for MOTION:** Smallest distance the motion sensor can detect = \_\_\_\_\_\_\_\_\_

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
|  | Using *x* vs. *t* Graph | Using *v* vs. *t* Graph | Using *a* vs. *t* Graph | % Difference |
| Describe/Plot  the  Graph |  |  |  | XXXXXX XXXXXX XXXXXX XXXXXX |
| Initial/resting position |  | XXXXXX XXXXXX XXXXXX | XXXXXX XXXXXX XXXXXX | XXXXXX XXXXXX XXXXXX |
| Final position |  | XXXXXX XXXXXX XXXXXX | XXXXXX XXXXXX XXXXXX | XXXXXX XXXXXX XXXXXX |
| Distance Travelled |  |  | XXXXXX XXXXXX XXXXXX |  |
| Initial Velocity |  |  | XXXXXX XXXXXX | XXXXXX  XXXXXX |
| Final Velocity |  |  | XXXXXX XXXXXX XXXXXX |  |
| Acceleration | XXXXXX XXXXXX |  |  | XXXXXXXXX XXXXXXXXX |

**B2. Motion Investigations Summary:**

**C. Coefficient of Kinetic Friction:**   
 The block will be pushed with a force sensor by overcoming and balancing the frictional force, as shown below. Draw a free-body diagram for the block, below.





**DATA TABLE I** Mass of the wooden block, Mb = ---------

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Mass on Top Mt (g) | M = Mb + Mt | Normal Force FN (N) | Frictional Force fk (N) | µk |
| 0 |  |  |  |  |
| 100 |  |  |  |  |
| 200 |  |  |  |  |
| 300 |  |  |  |  |
| 400 |  |  |  |  |
| 500 |  |  |  |  |
| 600 |  |  |  |  |
| 700 |  |  |  |  |

Also, plot a graph and determine the value of µk. Attach a copy of your graph to the report. List the value of µk from the graph, here\_\_\_\_\_\_\_\_\_\_\_\_\_ and in the conclusion.