

Your Name: \_\_\_\_\_

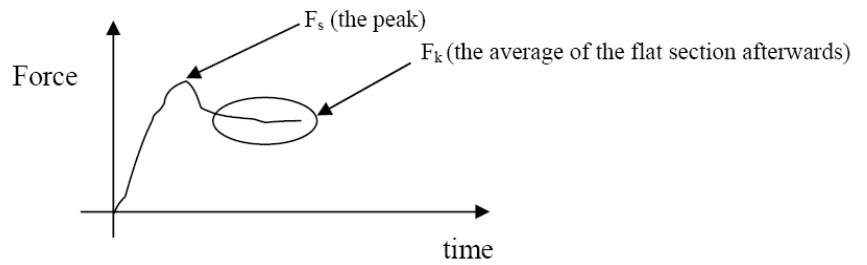
Your Group Members' Names: \_\_\_\_\_

Purpose: The purpose of this lab is to determine the coefficients of static and kinetic friction between the wooden lab bench and a material of your choice.

Procedure:

- *Step 1*: Write the name of the material you are testing in Table 1.
- *Step 2*: Open Logger Pro and use the force probe to measure the weight of the black box provided to you. Record this value in Table 1.
- *Step 3*: Set the box flat on the lab bench and attach the force probe.
- *Step 4*: Press "COLLECT" on the graph and pull horizontally. Once the block starts to move, continue pulling it horizontally at constant speed. This takes some practice, so check with the instructor when you think you've got a good graph.

- *Step 5*: Your graph should resemble the one on the right. Use the "Analyze Statistics" function to determine the maximum value for the force of static friction and the mean value for the force of kinetic friction. Record the values for the forces of friction in Table 2.



- *Step 6*: Insert a title for your graph, print it, and staple it to this sheet to turn in. You may wish to take a screenshot of the graph, paste the screenshot into Word and save it.
- *Step 7*: Use your data to determine the coefficients of static and kinetic friction between the material you chose and the aluminum surface. Record these values in Table 2. *Show all your work neatly.*

Results & Calculations:

Table 1

| Chosen Material | Weight of Black Box (N) |
|-----------------|-------------------------|
|                 |                         |

Table 2

| Measured Force of Static Friction (N) | Measured Force of Kinetic Friction (N) | Coefficient of Static Friction | Coefficient of Kinetic Friction |
|---------------------------------------|----------------------------------------|--------------------------------|---------------------------------|
|                                       |                                        |                                |                                 |

Conclusion: On the back of this page, discuss what you conclude based only on your results. This is a time to address the purpose of the lab and to summarize your results. Use concepts from the unit and include any sources of experimental error in your discussion.