

Name:

Partner:

Section/TA:

PHY123 *The Atwood Machine*

Trial #	1	2	3	4	5
m_1					
m_2					
m_{diff}					
m_{total}					
slope ₁					
Δ slope ₁					
slope ₂					
Δ slope ₂					
<slope>					
Δ <slope>					

What does the slope represent in the graph? _____

Draw the proper axis labels with proper units and proper values: plot a vs. m_{diff}/m_{total} with proper uncertainties



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What represents the calculated slope from the fit you obtained for the previous graph? What is this value? Is it consistent with the expected value? _____

Answer the following questions:

1. What would the acceleration a_y of the system be if the masses of the objects 1 and 2 are equal? ($m_1 = m_2$). What would the tension T of the string be?
2. Assume that you will do the experiment one more time, but, instead of simply releasing the system, you give a short impulse by pulling the heavier mass downward and then let go of it. In the LabQuest2 you analyze the region of the velocity vs. time graph right after the impulse duration.
 - a. How would the value of acceleration change compared to your previous measurements for the time interval after the impulse?
 - b. What happens if you instead give a short impulse in the other direction by pulling the lighter mass downward and then let go of it?