

Raw Data Sheet Dry Run

Student Name: Stetson Reger

Team members:

1.- _____

2.- _____

3.- _____

4.- _____

Instructor: _____

Velocity and Acceleration of Students

How does your motion correspond to the readings on the graph? Does the motion sensor read negative when you approach or when you walk away?

Approach.

Acceleration Along an Air Track

Record the mass of the car and of the weight as instructed in the manual. Record the slope of the velocity plot. Make one printout per group to be handed in, and note down the section title. Include units.

m_1 (mass of the cart): 400.5g (w/ flag)

m_2 (mass of the hanging weight): 25g

Slope: -0.507 m·s⁻²

Plot(v vs. t):

String Tension Along an Air Track

Record the mass of the car and of the weight as instructed in the manual. Record the slope of the velocity plot and the value of the tension. Make one printout (per plot) per group to be handed in, and note down the section title. Be sure to write down the units.

m_1 (mass of the cart with the force sensor): 501.5g

m_2 (mass of the hanging weight): 25g

Slope: -0.442 m·s⁻²

Tension: -0.22N

$$F = 0.025 \text{ Kg} \cdot 9.8 \frac{\text{m}}{\text{s}^2} = 0.245 \text{ N}$$

Plot (v vs. t):

Plot (F vs. t):