Data & Calculations – Newton’s 2nd Law lab NAME

There is no friction except at station 2. ***Include a free-body diagram with your calculations.***

**Station 1:**

mass of cart \_\_\_\_\_\_ g 🡪 \_\_\_\_\_\_ kg FBD for cart:

time start to finish \_\_\_\_\_\_ s

●

distance start to finish \_\_\_\_\_\_ m

(a) acceleration calculation

(b) force of fan calculation

**Station 2:**

mass of cart \_\_\_\_\_\_ g 🡪 \_\_\_\_\_\_ kg FBD for cart:

average acceleration \_\_\_\_\_\_ m/s2

●

(a) weight of cart calculation

(b) size of friction calculation

**Station 3:**

mass of cart \_\_\_\_\_\_ g 🡪 \_\_\_\_\_\_ kg FBD for cart:

average force on moving cart \_\_\_\_\_\_ N

●

FBD for hanging object:

●

(a) acceleration of cart calculation

(b) weight and mass of the hanging object calculation

**Station 4:**

tension in rope A \_\_\_\_\_\_ N FBD for washer :

measure of angle **α** \_\_\_\_\_\_ o

●

 FBD for hanging

 object:

●

(a) tension in rope B calculation

(b) tension in rope C calculation

(c) weight & mass of hanging object calculation

**Station 5**

tension in string while motionless \_\_\_\_\_\_\_\_ N FBD for object A FBD for object B

tension in string while moving \_\_\_\_\_\_\_\_ N

●

●

mass of A calculation acceleration of B calculation NET force on B calculation

NET force on A calculation mass of B calculation

acceleration of A calculation