Data Sheet page 1 Name _____

Part 1: (vector is on 0° and the other is on the 180°)
a) diagram of table: diagram of vector forces:

b) magnitudes and associated angles (from either x- or y-axis) plus errors (include weight and angle errors – for example weight error is 0.01 g; angle error is ± 0.05):

vector A

vector B

c) break into vector components and add together:

vector A

vector B

d) What do they add to?

Data sheet page 2

Part 2: (one on the 0° line, one on the 120° line and one on the 240° line)
a) diagram of table: diagram of vector forces:

b) magnitudes plus errors (similar errors as listed above) and associated angles:

vector A

vector B

vector C

c) break into vector components and add together:

vector A

vector B

vector C

d) What do they add to?

Part 3: (50 g masses and one 75 g mass)

a) diagram of table: diagram of vector forces:

b) magnitudes associated angles and errors:

vector A

vector B

vector C

c) break into vector components and add together:

vector A

vector B

vector C

d) What do they add to?

Part 4: (different weights of your choice)
a) diagram of table: diagram of vector forces:

b) magnitudes and associated angles plus error of vectors:

vector A

vector B

vector C

c) break into vector components and add together:

vector A

vector B

vector C

d) What do they add to?

Error Analysis

EA-1. Using one of your Parts above (2, 3, or 4), redo the components but this time add the error amount to your weight and to the angle.

Vector A:

Vector B:

Add the components below for the resultant vector:

EA-2. Using the same Part as above, reduce the weight and angle to the lower error amount and redo the components.

Vector A:

Vector B:

Add the components below for the resultant vector.

Find the difference between your x- and y- components from EA-1 and EA-2. This is your error. Error is commonly written using the average value ± error. Rewrite your vector below and include the error (the ± value) with your original values.