Name:_____ Sec./Group_____ Date:_____

5. Data

Free Fall:

g_{theo} = 9.8 m/s^2

g_{expt} = _____m/s^2 (as measured from the position *vs*. time data.)

%difference = _____

g_{expt} = _____ m/s^2 (as measured from the velocity *vs*. time data.)

%difference = _____

Projectile Motion:

g_{theo} = 9.8 m/s^2

g_{expt} = _____m/s^2 (as measured from the position *vs*. time data.)

%difference = _____

g_{expt} = _____ m/s^2 (as measured from the velocity *vs*. time data.)

%difference = _____

6. Analysis

6.1 Free Fall.

1. What is the value for the acceleration due to gravity found using the *y*-position versus time plot?

2. What is the error between the acceleration due to gravity found using the *y*-position versus time plot and the accepted value of 9.8 m/s^2?

3. What is the value for the acceleration due to gravity found using the *y*-component of velocity versus time plot?

4. What is the error between the value for the acceleration due to gravity found using the *y*-component of velocity versus time plot and the accepted value of 9.8 m/s^2?

5. Which method gave you a better approximation for the acceleration due to gravity? Explain why that method gave the better approximation.

6.2 Projectile Motion.

1. What is the value for the acceleration due to gravity found using the *y*-position versus time plot?

2. What is the error between the acceleration due to gravity found using the *y*-position versus time plot and the accepted value of 9.8 m/s^2?

3. What is the value for the acceleration due to gravity found using the y-component of velocity versus time plot?

4. What is the error between the value for the acceleration due to gravity found using the y-component of velocity versus time plot and the accepted value of 9.8 m/s^2?

5. Which method gave you a better approximation for the acceleration due to gravity? Explain why that method gave the better approximation.