**DATA SHEET**

Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ Date: \_\_\_\_\_\_\_\_\_\_\_

15 questions, 2 points, each 30 points total

1. Paste the *Vy*-time plot with fit for the ball below.
2. Enter three values for the vertical acceleration of the ball from the fits, and then average.

|  |  |
| --- | --- |
|  | Acceleration (m/s2) |
| Fit 1 |  |
| Fit 2 |  |
| Fit 3 |  |
|  |  |
| average |  |
|  |  |

1. Compare the value of the acceleration with the expected value of –*g* by calculating a percent difference. Show your work.

1. Paste the *Vy*-time plot with fit for the balloon below.
2. What is the value of the vertical acceleration of the balloon?
3. Paste an image of the basketball.mov file that you worked on, showing the tape measure, axes, and tracks below.
4. Paste the vertical velocity (*Vy*) time graph for the basketball here.
5. What is the vertical acceleration of the basketball?
6. How does the measured acceleration compare with the expected value −*g*?

1. Paste the horizontal velocity (*Vx*) time graph here.
2. What is the horizontal acceleration?
3. What is a possible explanation for the horizontal velocity-time graph?
4. What is the value of *Vy* when the basketball is at its highest point?
5. Does the slope of the *Vy*-time graph change significantly at that point?
6. What does your answer to question 14 imply about the acceleration of the basketball when it is at the highest point in its trajectory?