**Video Analysis of a Bouncing Ball to Calculate the Acceleration Due to Gravity**

**Video Analysis: Position – Time**

|  |  |  |
| --- | --- | --- |
| **Video Analysis** | **y(t) = At2 + Bt + C** | **Acc = 2A****(m/s2)** |
| # 1 |  |  |
| # 2 |  |  |
| # 3 |  |  |
| # 4 |  |  |

Table : The Position - Time analysis of each track. The parameters A, B and C are determined from fitting the data with a parabolic relation.

**Video Analysis: Velocity – Time**

|  |  |  |
| --- | --- | --- |
| **Video Analysis** | **vy(t) = At + B** | **Acc = A****(m/s2)** |
| # 1 |  |  |
| # 2 |  |  |
| # 3 |  |  |
| # 4 |  |  |

Table : The Velocity - Time analysis of each track. The parameters A and B are determined from fitting the data with a linear relation (they are not the same values from Table 1).

**Error Analysis (from EXCEL file)**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Video Analysis** | **Acc (m/s2)** | **Mean Acc (m/s2)** | **Stnd. Dev.** | **% Error** |
| # 1 |  |  |  |  |
| # 2 |  |
| # 3 |  |
| # 4 |  |