Objective : To find g, using the equation: M = 4π^2/g, which comes from T^2 = (4π^2/g) ∙ ((1/12 + d^2)/d)

Materials : Meter Stick, Paper Clip, Modeling Clay, C-Clamp, Calculator Unit (Calculater CBL, Photogate and Calculator program), Base and Rod.

|  |  |
| --- | --- |
| T^2 (s) | ((1/12 + d^2)/d) (m) |
| 2.8224 | 0.7055 |
| 2.3746 | 0.5833 |
| 2.6896 | 0.6666 |

Data Graphed:

|  |  |
| --- | --- |
| T(s) | d (m) |
| 1.68 | 0.15 |
| 1.541 | 0.25 |
| 1.64 | 0.5 |

Original Time and Distance:

Data Analysis:

Slope = 3.7815

T^2 = (4π^2/g) ∙ ((1/12 + d^2)/d)

Y = M ∙ X

3.7815 = 4π^2/g

g = 4π^2/3.7815

g = 10.4398 m/s^2