Simple Harmonic Motion Lab Report:

Objectives:

Find g from the equation: T²= 4π²/g ((L²/12 + d²)/ d)

Graph period squared vs. ((1/12)+ d^2)/ (d) to get the slope value to find the value of g.

L= 1m

Materials

Meter stick with holes in varying heights

Paper clip (to hold the meter stick for SHM to be exhibited)

Putty to assist the holding of the meter stick

Calculator w/ program for measuring the amplitude of a wave

Motion sensor in conjugation w/ the calculator program

 Data

|  |  |
| --- | --- |
| avg T in seconds | d in meters |
|  1.636 | 0.49 |
| 1.538 | 0.25 |
| 1.697 | 0.15 |

|  |  |
| --- | --- |
| ((1/12)+ d^2)/ (d) | T^2  |
| 0.660068 | 2.676 |
| 0.583333 | 2.3654 |
| 0.705556 | 2.879 |

|  |  |
| --- | --- |
|  |  |
|   |  |
|  |  |

Graph

M= 4π²/g

G from the data and graph= 4.186

M= 9.43106

Percent error= new-old/old 9.43106-9.81/9.81\*100= -3.8627%

Conclusion

Therefore by graphing the slope of period squared vs. ((1/12)+ d^2)/ (d) to get the slope value, I found the value of g. I only had a percent error of -3.8627% so my answer is valid and acceptable. By using the program on the calculator to find the period of the wave I was able to collect all of the above data and get my results as I have thusly provided here in this report.