

Trial	Time	Difference
1	4:90	0.10s
2	4:94	0.06s
3	4:97	0.03s
4	4:97	0.03s
5	4:91	0.09s
6	4:91	0.09s
7	4:94	0.06s
8	5:06	0.06s
9	4:90	0.10s
10	4:91	0.09s

An oscillation is a regular variation in some quantity (i.e. magnitude or position) about an equilibrium point. A period is then the time it takes for a system to complete one full oscillation and return to the original configuration.

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L represents the length of the string - this will affect the period of the oscillation (assuming mass is the same).

We determine the length by measurement (ruler has uncertainty of  $\pm 0.05\text{cm}$ ), and got

$$L = 101.0 \pm 0.05 \text{ cm}$$

Adjusted the length after tying the mass:

$$L = 88.2 \pm 0.05 \text{ cm}$$

Lap	Timestamp
1	1.71
2	1.92
3	1.86
4	1.84
5	2.06
6	1.95
7	1.88
8	1.81
9	2.01

Lap	Timestamp
10	1.90
11	1.99
12	1.83

Period:  $1.71 \pm 0.03s$

g (derived value) = 11.907925285401749

$$L_2 = 66.2 \pm 0.05 \text{ cm}$$