Experiment Name: To determine the spring constant and effective mass of a given spiral spring.

Experimental Data:

(A) Length of the spring, L = 28.5 cm

(B) Determinations of extensions and time periods:

Table: Determinations of extensions and time periods

No. of Obs.	Loads m_O (gm)	Extension l (cm)	No. of Vibrations n	Total time t (s)	Period $T = t / n$ (s)	T^2 (s^2)
1	150	8.5	20	13	0.65	0.4225
2	200	12	20	15	0.75	0.5625
3	250	15	20	17	0.85	0.7225
4	300	18	20	18	0.9	0.81
5	350	21.5	20	20	1	1
6	400	24.5	20	21	1.05	1.1025

L vs Mo

$y = 0.0637x - 0.9381$

T² vs M₀

T^2 vs M_0

$y = 0.0027x + 0.0157$

Y-axis: $T^2 (sec^2)$

Y-axis values (top to bottom): 1.24, 1.14, 1.04, 0.94, 0.84, 0.74, 0.64, 0.54, 0.44, 0.34

X-axis: Mo (gm)

X-axis values: 0, 50, 100, 150, 200, 250, 300, 350, 400, 450