Length of pendulum ± 0.05 m (x)	Time for 20 oscillations ± 0.2 s	Period T (s)	
0.21	18.1	.905	.91
0.40	25.5	1.275	1.28
0.62	31.5	1.575	1.58
0.80	36.8	1.84	1.84
1.00	40.4	2.02	2.02

(y) T^2 (s^2)		Absolute error of T^2	
.8281	.83	.0183	.02
1.6384	1.64	.0257	.03
2.4964	2.50	.0317	.03
3.3856	3.39	.0368	.04
4.0804	4.08	.0405	.04

Period = $\frac{\text{Time for 20 oscillation}}{20}$

Ex. $T_1 = \frac{18.1s}{20} = .905s = .91s$

$T^2 = (\text{Period})^2$

Ex. $T_1^2 = (.91s)^2 = .8281s^2 = .83s^2$

% error of $T^2 = 2 * \left(\frac{\text{uncert. of time for 20 oscillations}}{\text{time for 20 oscillation}}\right) * 100$

Ex. % error $T_1^2 = \left(\frac{0.2s}{18.1}\right) * 2 \times 100$

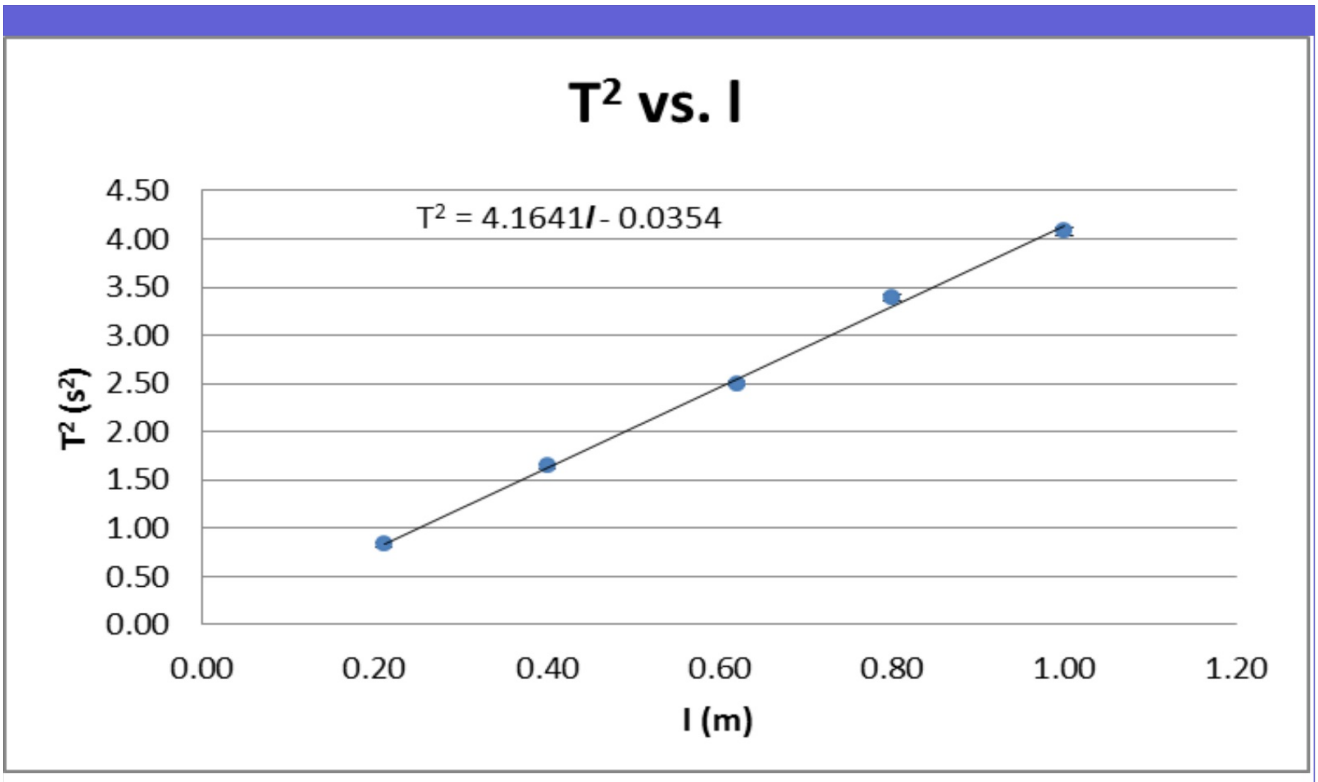
$= 2.21\% * .83 = 0.0183 = \text{abs. error for } T_1^2$

$(T)^2 = \left(2\pi\sqrt{\frac{l}{g}}\right)^2$

$T^2 = 4\pi^2\frac{l}{g} = \frac{4\pi^2}{g}l + 0$

$y = mx + b$

$m \quad x \quad b$



Slope = 4.1641 s^2 m^{-1}

Slope = $4\pi^2/g$

Therefore $g = 4\pi^2/\text{Slope}$

$g = 4\pi^2/4.1641$

$g = 9.48$ m s^{-2}