

Exp. No. 3

Acceleration on Inclined Plane

Name: Grade:

Student's No.: Day and Date:

Partners Names: Sec.:

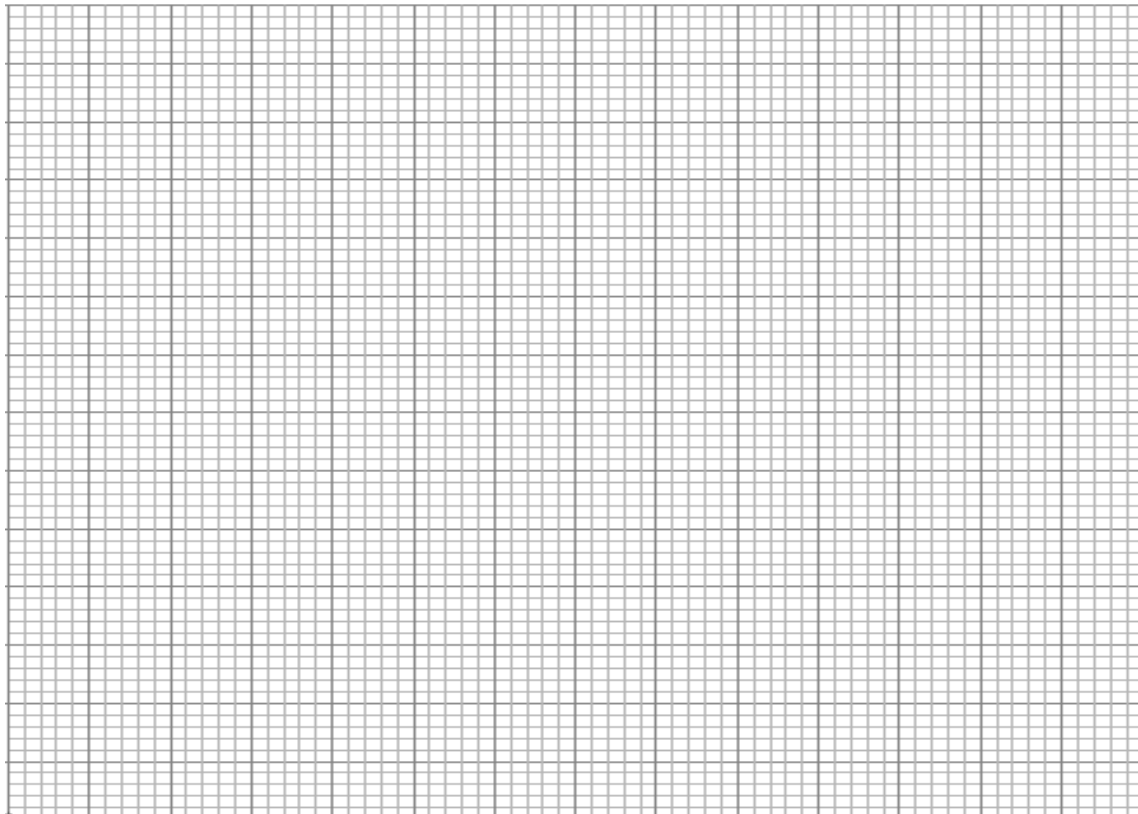
Data:

(1) Measure the sin of the inclination angle $\sin \theta = H / L =$

Trial	X (cm)	t ₁ sec	t ₂ sec	t ₃ sec	\bar{t} sec	\bar{t}^2 sec ²
1						
2						
3						
4						
5						
6						

(1) For each value of X find the average time squared \bar{t}^2 , and fill them in the table above.

(2) Plot the distance traveled **X versus** \bar{t}^2 and connect the points with the best two lines. **calculate the slope of each, call them S_{max} and S_{min}**



(4) Find $S_{max} = \dots\dots\dots$

$S_{min} = \dots\dots\dots$

(5) Find the slope $S = (S_{max} + S_{min}) / 2 = \dots\dots\dots$

(6) Find the error in the slope $\Delta S = (S_{max} - S_{min}) / 2$

$\dots\dots\dots$

(7) Find the acceleration due to gravity $g = \frac{a}{\sin\theta} = \frac{2S}{\sin\theta} =$

$\dots\dots\dots$

(8) Find the error in g

$\Delta g = \dots\dots\dots$

(9) Questions:

(1) Find the velocity of the glider at the bottom of the inclined plane in terms **X, g, and $\sin\theta$** .

(2) Is g constant at all locations on earth? Why?

(3) Discuss your result for g.