

Exp. No. 6

Uniform Acceleration motion

Name: Grade:

Student's No.: Day and Date:

Partner's Names: Sec:

Density of steel, $\rho_{st} = 7.9 \text{ gm/cm}^3$, copper $\rho_{Cu} = 8.23 \text{ gm/cm}^3$

Trial	Mass of the ball	t ₁	t ₂	t ₃	\bar{t}

Table 1: To show that free fall time does not depend on mass

Table 2: Fill table 2 and use it to determine the acceleration due to gravity g.

Trial	Mass of the ball	t ₁	t ₂	t ₃	\bar{t}	\bar{t}^2	Distance y (m)
1							
2							
3							
4							
5							

(1) From the graph of y versus \bar{t}^2

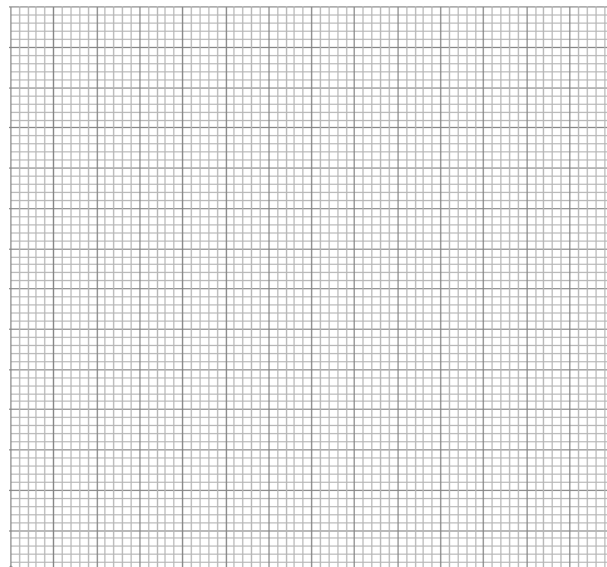
Find the slope S and g

S =

g =

(2) Calculate the error in g, $\Delta g = 2\Delta S$

Question 1: Prove that the covered distance in the gravity of the earth does not depend on the mass of the falling object.



Question 2: Derive the equation $y = \frac{1}{2}gt^2$.