

Motion on Inclined Surface



General Aim

Determination of acceleration of gravity (g).

Method

Galileo's method

Learning Objectives (ILOs)

- Analyze the motion of a body on an inclined surface.
- Determine the acceleration due to gravity.

Theoretical Background/Context

If an object is released from rest and gains speed at a steady rate (as it would in free-fall or when rolling down an inclined plane), then the total distance, L , traveled by the object is proportional to the time squared needed for that travel and the proportionality constant is exactly half of the acceleration a .

$$L = \frac{1}{2} a t^2$$

Principle of Work

Measuring the time that is taken by the ball to roll a known distance down the inclined plane.