

Motion in a straight line - Worksheet .
PHYSICS - Grade XI

1. Uniform motion - numericals.
2. uniform acceleration - derivation of equations of motion.
3. Derive an equation for distance travelled by an object during n^{th} second of its motion.
 - A. Verify dimensionally the relation,
$$T = 2\pi \sqrt{l/g}$$
 $T \rightarrow$ time period of a simple pendulum.
 $l \rightarrow$ length of the pendulum, g acceleration due to gravity.
5. The wavelength λ associated with a moving particle depends upon its mass m , velocity v and planck's constant ' h '. Show dimensionally that $\lambda \propto \frac{h}{mv}$.
6. Convert 1 J to erg.
7. The radius of a sphere is measured to be 5.3 ± 0.1 cm. Cal. the percentage error in volume.
8. A balloon is moving upwards with a speed of 5 m/s. When it is at a height of 98 m, a packet is dropped from it. What is the velocity of the packet when it strikes the ground.
 $g = 9.8 \text{ m/s}^2$.
9. A stone is thrown vertically upwards with an initial velocity of 14 m/s. Find the maximum height reached and the time of ascent $g = 9.8 \text{ m/s}^2$.