

MOTION (ix)

1. A cyclist is pedalling his bicycle at a speed of 54km/hr. In how much time will it cover a distance of 600 meters?
2. A motor bike is moving with a velocity of 5m/s. Its velocity increases to 25m/s over a time span of 10 sec. calculate the acceleration produced by the motor bike.
3. A car starts from rest, if the engine of the car produces an acceleration of 1.5m/s^2 for 30 sec. Calculate final velocity.
4. The velocity of a body changes from 2m/s to 20 m/s when the acceleration is 2m/s^2 . Calculate how long the acceleration acts.
5. A body initially having a velocity 'u' is acted upon by an acceleration of 0.5 m/s^2 for 20 sec. Such that the final velocity of the body is 20m/s. calculate the 'u'.
6. A stone is dropped from a cliff reaches the ground in 1.5s. If acceleration due to gravity is 9.8 m/s^2 . What is the velocity of body before hitting the ground?
7. A motorboat starting from rest on a lake accelerates in a straight line at a constant rate of 3.0m/s^2 for 8.0s. How far does the boat travel during this time?
8. A ball is gently dropped from height of 20m. If its velocity increases uniformly at the rate of 10m/s^2 with what velocity will it strike the ground? After what time will it strike the ground.
9. A car starts from rest and accelerates at 2m/s^2 for 10 sec. Calculate (a) the final velocity (b) distance travelled.
10. A stone is thrown in a vertically upward direction with a velocity of 5 m/s. If the acceleration of stone during its motion is 10 m/s^2 in the downward direction. What will be the height attained by the stone and how much time will it take to reach there.