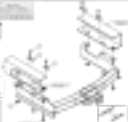


PHYSICS 101: MECHANICS

QUESTION 1

A particle of mass m moves in a circular path of radius r with a constant angular velocity ω . Calculate the centripetal force acting on the particle.



QUESTION 2

A block of mass M is pushed up a smooth inclined plane of length L and height h . Calculate the work done by the applied force.

QUESTION 3

A car of mass m starts from rest and accelerates uniformly to a speed v in time t . Calculate the distance traveled by the car.

ANSWERS:

QUESTION 1: The centripetal force F_c is given by $F_c = m\omega^2 r$.

QUESTION 2: The work done W is equal to the change in potential energy, $W = Mgh$.

QUESTION 3: The distance s traveled is $s = \frac{1}{2}vt$.