

# Question Paper

## Topic 1: Mechanics

Q1. A car is traveling at a constant speed of 60 km/hr. If it covers a distance of 120 km, how long will it take to reach its destination?

Answer: 2 hours

Explanation:  $\text{Time} = \text{Distance} / \text{Speed} = 120 \text{ km} / 60 \text{ km/hr} = 2 \text{ hours}$

Q2. A ball is thrown vertically upwards with an initial velocity of 20 m/s. How high will the ball go before it starts falling back down?

Answer: 20.4 meters

Explanation: Using the kinematic equation:  $\text{Final velocity}^2 = \text{Initial velocity}^2 + 2 * \text{acceleration} * \text{distance}$ . At the highest point, final velocity is 0. Solving for distance gives 20.4 meters.