

QUES 04:-

An aeroplane is flying in a horizontal direction with a velocity 600 km/h at a height of 1960 m . When it is vertically above the point A on the ground, a body is dropped from it. The body strikes the ground at point B . Calculate the distance AB .

Solution From

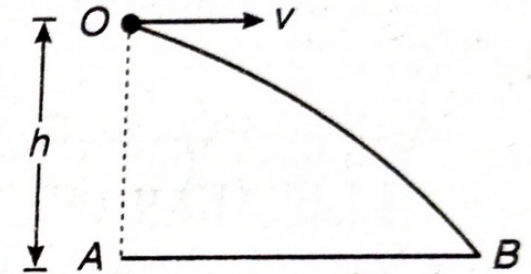
$$h = \frac{1}{2} gt^2$$

we have,

$$t_{OB} = \sqrt{\frac{2h_{OA}}{g}} = \sqrt{\frac{2 \times 1960}{9.8}} = 20 \text{ s}$$

Horizontal distance

$$\begin{aligned} AB &= vt_{OB} \\ &= \left(600 \times \frac{5}{18} \text{ m/s} \right) (20 \text{ s}) \\ &= 3333.33 \text{ m} = 3.33 \text{ km} \end{aligned}$$



Ans.