

Time and Distance

① How many minutes does Aditya take to cover a distance of 400m, if he runs at a speed of 20 km/hr?

Soln:-

$$\text{Aditya's speed} = 20 \text{ km/hr} = \left(20 \times \frac{5}{18}\right) \text{ m/sec} \\ = \frac{50}{9} \text{ m/sec}.$$

$$\therefore \text{Time taken to cover 400m} = \left(400 \times \frac{9}{50}\right) \text{ sec}$$

$$= 72 \text{ sec} = 1 \frac{12}{60} \text{ min} = 1 \frac{1}{5} \text{ min}$$

② A cyclist covers a distance of 750 m in 2 min 30 sec. What is the speed in km/hr of the cyclist?

Soln:-

$$\text{speed} = \left(\frac{750}{150}\right) \text{ m/sec} = 5 \text{ m/sec}$$

$$= \left(5 \times \frac{18}{5}\right) \text{ km/hr} = 18 \text{ km/hr}.$$

③ A dog takes 4 leaps for every 5 leaps of a hare but 3 leaps of a dog are equal to 4 leaps of the hare. Compare their speeds.

Soln:- Let the distance covered in 1 leap of the dog be x and that covered in 1 leap of the hare