

A car travels a distance of 15 km in 20 mins. Find the speed of the car in (i) kmh^{-1} & (ii) ms^{-1}

Distance = 15 km

Time = 20 mins

$$S = \frac{d}{t}$$

~~time =~~

distance = 15 km

1 km = 1000 m

15 km = 15000 m

time = 20 min

60 min = 1 hr

1 min = $\frac{1}{60}$ hr

$$1 \text{ min} = \frac{1}{60} \text{ hr}$$

$$20 \text{ min} = \frac{20}{60} \text{ hr}$$

$$20 \text{ min} = \frac{1}{3} \text{ hr}$$

$$1 \text{ min} = \frac{1}{60} \text{ hr}$$

$$1 \text{ min} = \frac{1}{3} \text{ hr}$$

(Only steps)

$$s = \frac{d}{t}$$

$$s = \frac{d}{t} \\ = \frac{15 \text{ km}}{\frac{1}{3} \text{ hr}}$$

$$= \frac{15}{\frac{1}{3}}$$

$$= 15 \times 3 \text{ km/hr} \\ = 45 \text{ km/hr}$$

$$= \frac{15 \times 3}{1}$$

$$= 45 \text{ km/hr}$$

4) How long will a train take to travel a distance of 200 km with a speed of 60 kmh⁻¹?

$$\frac{200}{60}$$

$$1 \text{ hr} = 60 \text{ km}$$

$$s = \frac{d}{t}$$

$$s = \frac{d}{t}$$

$$t = \frac{d}{s}$$

$$\frac{10 \cancel{200}}{\cancel{60} 3} = 3 \frac{1}{3} \text{ hr}$$

$$10 \cancel{200} \text{ km}$$

$$3 \cancel{60} \text{ km}$$

$$= 3 \text{ hr} + 20 \text{ min}$$

$$t = 3 \frac{1}{3} \text{ hr}$$

5) A boy travels with a speed 10 m for 30 mins. How much distance does he travel?

$$S = 10 \text{ m/s}$$

$$t = 30 \text{ min} = 30 \times 60 = 1800$$

$$S = \frac{d}{t}, \quad d = S \times t$$

$$= 10 \times \cancel{1800}$$

$$= 18000 \text{ m}$$

$$= \boxed{18 \text{ km}}$$

$$\# \quad \frac{10}{30}$$

$$\begin{aligned} &= 1 \text{ min} = 60 \text{ secs} \\ &= 30 \times 60 \\ &= 1800 \text{ s} \end{aligned}$$

$$S = \frac{d}{t}$$

$$10 = \frac{d}{1800}$$

$$= 1800 \times 10$$

$$= 18000 \text{ m}$$