

Q. A train travels 82.6 Km/hr. How many meters will it travel in 15 mins

$$\frac{82.6}{60} = 1.37$$

$$\therefore \text{for 15 mins} = 1.37 \times 15$$

$$= \underline{\underline{20.65}}$$

$$= 20.65 \times 100 = \underline{\underline{20600}}$$

Q. How many minutes does Aditya take to cover a distance of 400m, if he runs at a speed of 20km/h.

$$\text{Time} = \frac{D}{S} = \frac{400}{20 \times \frac{5}{18}} = \frac{400 \times 18}{20 \times 5} = \underline{\underline{72 \text{ sec}}}$$

$$= \underline{\underline{1 \text{ Min } 12 \text{ sec}}}$$

Q. A cyclist covers a dist. of 150m in 2 Min 30 sec. What is the speed in km/h.

$$\text{Speed} = \frac{D}{T} = \frac{150}{5} \times \frac{18}{5} = \underline{\underline{1.8 \text{ km/h}}}$$

Q. A man walk at the speed of 4km/hr. from point A to B & come back from B to A at speed of 6km/h. What would be the Ratio of Time taken by the man in walking from point A to B to that from point B to A.

$$\frac{\text{A to B}}{\text{B to A}} = \frac{4}{6} = \frac{2}{3} \Rightarrow \text{Ratio of speed}$$

$$\text{Time} \Rightarrow 3:2$$

Q. A trip to a destination is made in the following way : 900 km by train at avg. speed of 60km/h, 3000 km by plane at avg. speed of 500 km/h, 400 km by boat at avg. speed of 25 km/h, 15 km by taxi at avg. speed of 45 km/h. What avg. speed for the entire journey.

$$\text{Total dist.} \rightarrow 900 + 3000 + 400 + 15 = 4315$$

$$= \left(\frac{900}{60} + \frac{3000}{500} + \frac{400}{25} + \frac{15}{45} \right) \text{ h}$$

$$= \frac{15}{1} + \frac{6}{1} + \frac{16}{1} + \frac{1}{3} = 37 \frac{1}{3}$$

$$= \frac{112}{3}$$

$$= \frac{45 + 18 + 48 + 3}{3}$$

$$= \frac{114}{3}$$

$$\text{Avg. speed} = \frac{4315}{112} \times 3.2$$

$$= \underline{115.58 \text{ kmph.}}$$

16-09-19

Q. A man travelled from the village to the post office at the rate of 25 km/h & walked back at rate of 4 km/h. If the whole journey took 5 hr 48 min, find the dist. of post office from the village.

$$\frac{2x4}{x+4} = \frac{2 \times 25 \times 4}{25+4} = \frac{200}{29}$$

$$D = S \times T = \frac{200}{29} \times 5 \frac{4}{5}$$

$$= \frac{40}{29} \times \frac{29}{5}$$

$$= \underline{40 \text{ km}}$$

$$\therefore \text{from village} = \underline{20 \text{ km.}}$$

Q. A man goes to his office from his house at a speed of 3km/h & returns at a speed of 2km/h. If he takes 5 hrs in going & coming. What is the distance b/w house & office?

$$\frac{2xy}{x+y} = \frac{2 \times 3 \times 2}{3+2} = \frac{12}{5}$$

$$D = S \times T = \frac{12}{5} \times 5 = 12 \text{ km.}$$

∴ House to office = 6 km.

Q. A person crosses 600m long street in 5 mins. What is his speed in km.

$$\text{Dis.} = 600 \text{ m} = 0.6 \text{ km}$$

$$5 \text{ min} = \frac{1}{12} \text{ hrs.}$$

$$\text{Speed} = \frac{D}{T} = \frac{0.6 \times 1}{\frac{1}{12}} = 0.6 \times 12 = \underline{\underline{7.2}}$$

Q. A man complete a journey in 10 hrs. He travels 1st half of the journey at the rate of 21km/h, & 2nd half @ 24km/h. Find the total journey in km.

$$\frac{2xy}{x+y} = \frac{2 \times 21 \times 24}{21+24} = \frac{42 \times 24}{45}$$

$$D = S \times T = \frac{42 \times 24}{45} \times 10 = \frac{2016}{9} = \underline{\underline{224.}}$$

Q. Two boys starts from the same place walking at the rate of 3 km/h & 5.5 km/h resp. in the same direction what time will they take to be 8.5 km/h apart.

$$5.5 - 3 = 0.5$$

$$T = \frac{D}{S} = \frac{8.5}{0.5} = \underline{\underline{17 \text{ hrs.}}}$$

Q. In covering a dist. of 30 km , Arun takes 2 hrs more than Anil if Arun double his speed he would take 1 hr less than Anil with what is Arun's speed.

$$\text{Time} = 6 \text{ hrs}$$

$$D = 30 \text{ km}$$

$$S = \frac{D}{T} = \frac{30}{6} = \underline{\underline{5 \text{ kmph.}}}$$

Q. Excluding stoppage, the speed of the bus is 54 km/h & including stoppages it is 45 kmph for how many minutes does the bus stop per hr.

$$54 - 45 = \underline{\underline{9}}$$

$$\therefore \frac{9}{54} \times \frac{10}{60} = \underline{\underline{10 \text{ mins.}}}$$

20-09-19

Q An aeroplane flies along the the 4 sides of a square at the speed of 100, 200, 300 & 400 km/hr, find the avg. speed of the plane around the field.

$$\text{Speed} = y \text{ km/hr}$$

$$\text{side} = 4x.$$

$$\frac{x}{100} + \frac{x}{200} + \frac{x}{300} + \frac{x}{400} = \frac{4x}{y}$$

$$\frac{12x + 6x + 4x + 3x}{1200} = \frac{4x}{y}$$

$$1200$$

$$\frac{12x + 6x + 4x + 3x}{1200} = \frac{25x}{1200} = \frac{4x}{y}$$

$$y = \frac{4x \times 1200}{25x} = \frac{4800}{25} = \underline{\underline{192 \text{ kmph}}}$$

Q. A fast train takes 3hrs less than a slow train for a journey of 600 kmph. If the speed of the slow train is 10 kmph less than that of the fast train then find the speed of 2 trains.