

$$\frac{x}{200} + \frac{x}{400} + \frac{x}{600} + \frac{x}{800} = \frac{4x}{y} \Leftrightarrow \frac{25x}{2400} = \frac{4x}{y}$$

$$\Leftrightarrow y = \left(\frac{2400 \times 4}{25} \right) = 384$$

\therefore Average speed = 384 km/hr.

⑧ Walking at $\frac{5}{6}$ of its usual speed, a train is 10 min too late. find its usual time to cover the journey.

Soln:- New speed = $\frac{5}{6}$ of the usual speed

New time taken = $\frac{6}{5}$ of the usual time

So, $(\frac{6}{5} \text{ of the usual time}) - (\text{usual time}) = 10$

$\Rightarrow \frac{1}{5}$ of the usual time = 10 min \Rightarrow usual time

= 50 min.

⑨ If a man walks at the rate of 5 kmph, he misses a train by 7 min. However, if he walks at the rate of 6 kmph, he reaches the station 5 min before the arrival of the train, find the distance covered by train the station.

Soln:- Let the required distance be x km

Difference in the times taken at two

speeds = 12 min = $\frac{1}{5}$ hr

$$\therefore \frac{x}{5} - \frac{x}{6} = \frac{1}{5} \Leftrightarrow 6x - 5x = 6 \Leftrightarrow$$

$x = 6$. Hence, the required distance is 6 km.