



Ans A.

17 A train travels at a certain average speed for a distance of 63 km and then travels a distance of 72 km at an average speed of 6 km/hr more than its original speed. If it takes 3 hours to complete the total journey, what is the original speed of the train in km/hr?

- A. 24
- B. 33
- C. 42 ✓
- D. 66

- Your Answer :
- Correct Answer : C

◦ **Answer Justification :**

Given that distance = 63 km.

Let original speed of train = x km/hr.

Time = distance / time = $63/x$ hrs.

And it travels a distance of 72 km at an average speed of 6 km/hr more than the original speed.

Distance = 72 km; speed = $(x + 6)$ km/hr.

Time = $72/(x+6)$ hrs.

If it takes 3 hours to complete the whole journey

$$63/x + 72/(x + 6) = 3 \text{ hrs}$$

$$\Rightarrow 63(x + 6) + 72x = 3x(x + 6)$$

$$\Rightarrow 21(x + 6) + 24x = x(x+6)$$

$$\Rightarrow 45x + 21 \times 6 = x^2 + 6x$$

$$\Rightarrow x^2 - 39x - 126 = 0$$

$$\Rightarrow (x - 42)(x + 3) = 0$$

$$\square x = 42 \text{ km/hr}$$

$$\square \text{The original average speed} = 42 \text{ km/hr}$$

18 A group of 630 children is seated in rows for a group photo session. Each row contains three less children than the row in front of it. Which one of the following number of rows is not possible?