# Average Speed Questions



# MCQ Question 1 A man travels from A to B at a speed of 36 km/hr in 74 minutes and he travels a distance from B to C with a speed of 45 km/hr in 111 minutes. Find the average speed of whole journey. 1. 41.4 km/hr 2. 39.8 km/hr 3. 40.8 km/hr 4. 36.2 km/hr

Answer (Detailed Solution Below)

Option 1: 41.4 km/hr



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# Average Speed MCQ Question 1 Detailed Solution

## Given:

A man travels from A to B at a speed of 36 km/hr in 74 minutes and he travels a distance from B to C with a speed of 45 km/hr in 111 minutes.

## Formula used:

Average speed = Total distance/Total time taken

## Calculation:

Ratio of time taken = 74:111

Time = 2:3

Average Speed =  $\frac{36 \times 2 + 45 \times 3}{2 + 3}$ 

Average Speed = 207/5

Average Speed = 41.4 km/hr

.. The average speed of whole journey is 41.4 km/h



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Two trains, X and Y, travel from A to B at average speeds of 80 km/hr and 90 km/hr respectively. If X takes an hour more than Y for the journey, then the distance between A and B is \_\_\_\_.

- 1. 360 km
- 2. 720 km
- 3. 540 km
- 4. 630 km

## Answer (Detailed Solution Below)

Option 2: 720 km

# Average Speed MCQ Question 2 Detailed Solution

## Given:

Two trains, X and Y, travel from A to B at average speeds of 80 km/hr and 90 km/hr respectively.

### Formula:

Speed = distance/time

## Calculation:

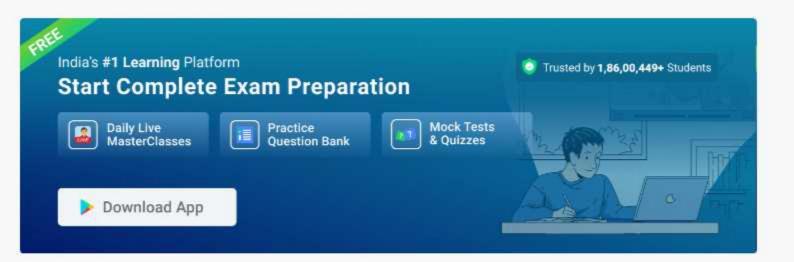
Let distance be x km

According to the question

x/80 - x/90 = 1

$$\Rightarrow (9x - 8x)/720 = 1$$

$$\Rightarrow x = 720 \text{ km}$$



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A car covers a distance of 48 km at a speed of 40 km/h and another 52 km with a speed of 65 km/h. What is the average speed of the car (in km/h) for the total distance covered?

1. 52

2. 50

3. 52.5

4. 53

# Answer (Detailed Solution Below)

Option 2:50

# Average Speed MCQ Question 3 Detailed Solution

## Given:

Speed<sub>1</sub> = 40 km/h, Distance<sub>1</sub> = 48 km

Speed<sub>2</sub> = 65 km/h, Distance<sub>2</sub> = 52 km

# Formula used:

Time = Distance/ Speed

Average Speed = Total Distance/ Total Time

## Calculation:

Total Distance traveled = 48 km + 52 km

⇒ 100 km

Total Time = 48 km/ 40 km/h + 52 km/ 65 km/h

 $\Rightarrow$  6/5 + 4/5 = 2 hours

Average Speed = 100 km/ 2 hours

.. The required Speed = 50 km/h



## MCQ Question 4

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Ram covered 60 km in a bus in 50 minute, after deboarding the bus, he took rest for 5 min. There after he took a taxi to his home 30 km away and reached in 20 min. find his average speed in km/h.

1. 72

2. 60

3. 84

4. 64

# Answer (Detailed Solution Below)

Option 1:72

## Average Speed MCQ Question 4 Detailed Solution

## GIVEN:

Ram covered 60 km in a bus in 50 min. after deboarding the bus, he took rest for 5 min. There after he took a taxi to his home 30 km away and reached in 20 min.

## CONCEPT:

Basic concept of time speed and distance.

## FORMULA USED:

Average speed = Total distance/Total time taken

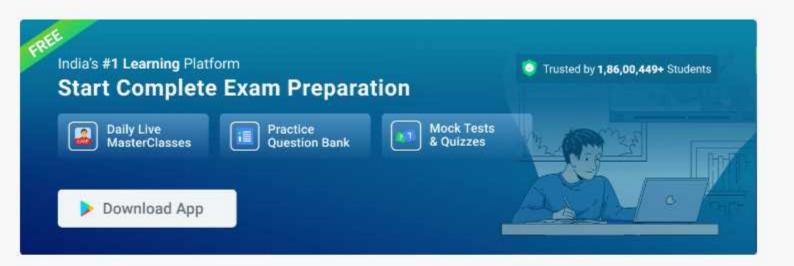
## CALCULATION:

Total distance = 60 + 30 = 90 km

Total time taken = 50 + 5 + 20 = 75 min = 5/4 hr

Hence,

Average speed = 90/(5/4) = 72 km/h



## MCQ Question 5

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One person travels on through the sides of an equilateral triangle at a speed of 12 kmph 24 kmph, and 8 kmph, Find the average speed of it. (In kmph)

1. 14

2. 13

3. 12

Answer (Detailed Solution Below)

Option 3:12

# Average Speed MCQ Question 5 Detailed Solution

Given:

The speed of the man is 12 km/h, 24 km/h and 8 km/h

Concept Used:

Average speed = total distance/total time

The sides of an equilateral triangle are equal.

Calculation:

Let, the side of the triangle be x km.

As we know,

Time to cover x km distance at a speed of 12 km/hr = x/12 hrs

Time to cover x km distance at a speed of 24 km/hr = x/24 hrs

Time to cover x km distance at a speed of 8 km/hr = x/8 hrs

Total distance covered by the man = (x + x + x) = 3x

Total time to cover the distance (x/12 + x/24 + x/8)

$$\therefore$$
 Average speed =  $\frac{3x}{\frac{x}{24} + \frac{x}{12} + \frac{x}{4}}$ 

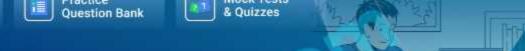
$$\Rightarrow \frac{3x}{x+2x+3x}$$

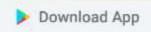
$$\Rightarrow$$
 3x / (6x/24)

 $\mathrel{\raisebox{.3ex}{$\scriptstyle .$}}$  The average speed of the person is 12 km/h.

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A person covers a certain distance with 8 km/hr, he gets late by 12 minutes. If he covers the same distance with 12 km/hr, then he gets 2 minutes late only. Find the time in which he must reach the destination so that he is not late.

- 1. 18 minutes
- 2. 20 minutes
- 3. 30 minutes
- 4. 28 minutes

# Answer (Detailed Solution Below)

Option 1:18 minutes

# Average Speed MCQ Question 6 Detailed Solution

Suppose the distance to be covered = x km

$$\therefore x/8 - 12/60 = x/12 - 2/60$$

$$\Rightarrow$$
 x/8 - x/12 = 10/60

$$\Rightarrow x = 4$$

:. Scheduled time = 4/8 - 12/60 = 0.3 hours = 18 minutes



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A travels 15 km with a speed of 30 km/h. He travels another 25 km with a speed of 10 km/h. What is his average speed for the entire journey?

- 1. 40/3 km/h
- 2. 80/3 km/h
- 3. 20 km/h
- 4. 12 km/h

# Answer (Detailed Solution Below)

Option 1: 40/3 km/h

# Average Speed MCQ Question 7 Detailed Solution

## Given

Distance<sub>1</sub> = 15 km, Speed<sub>1</sub> = 30 km/h

Distance<sub>2</sub> = 25 km, Speed<sub>2</sub> = 10 km/h

## Formula Used:

Speed = Distance/Time

Average speed = Total distance/Total time

## Calculation:

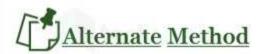
According to the question,

Total distance = 15 + 25 = 40 km

Total time = 15/30 + 25/10

 $\Rightarrow$  (15 + 75)/30 = 90/30 = 3 hours

SIDO .. The average speed for the entire journey is 40/3 km/h.



## Given

$$D_1 = 15 \text{ km}, S_1 = 30 \text{ km/h}$$

$$D_2 = 25 \text{ km}, S_2 = 10 \text{ km/h}$$

## Formula Used:

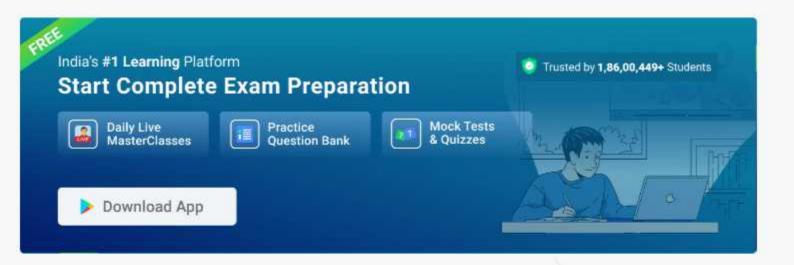
Average speed = 
$$\frac{D_1 + D_2}{\frac{p_1}{S_1} + \frac{p_2}{S_2}}$$

## Calculation:

Average speed for the entire journey = 
$$\frac{15+25}{\frac{15}{20}+\frac{25}{20}}$$

$$= \frac{40}{0.5+2.5}$$

$$=\frac{40}{3} km/h$$



## MCQ Question 8

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If a train departs from Delhi at 6: 50 a.m. and reaches Dehradun at 1: 00 p.m. and then travels back to Delhi in 5 hrs 20 minutes. Calculate the distance (in km) between Delhi and Dehradun if average speed of train is 120 km/hr?

- 1. 1020

4. 690

## Answer (Detailed Solution Below)

Option 4:690

## Average Speed MCQ Question 8 Detailed Solution

Let the total distance between Delhi and Dehradun be d, then

Total distance covered by train is 2d

Time taken by train from Delhi to Dehradun = 6 hrs 10 minutes

Time taken by train from Dehradun to Delhi = 5 hrs 20 minutes

Total time taken = 6 hrs 10 minutes + 5 hours 20 minutes

⇒ Total time taken = 11 hours 30 minutes = 11.5 hours

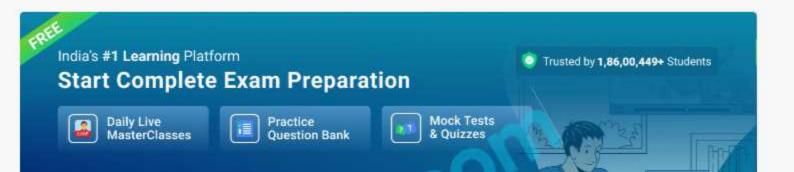
## Average Speed = Total Distance/Total Time

120 = 2d/11.5

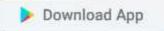
 $\Rightarrow$  d = (120 × 11.5)/2

 $\Rightarrow$  d = 690 km

:. Distance between two cities = 690 km



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Neeraj covers two distances of 10 km and 20 km in 1 hour and 5 hours respectively. What will be the average speed of Neeraj for the whole journey?

- 1. 4 km/hour
- 2. 7 km/hour
- 3. 5 km/hour
- 4. 6 km/hour

## Answer (Detailed Solution Below)

Option 3:5 km/hour

# Average Speed MCQ Question 9 Detailed Solution

# GIVEN:

10 km and 20 km distance is covered in 1 hours and 5 hours respectively.

## FORMULA USED:

Average speed = Total distance/total time

# Calculation:

Total distance = 10 + 20 = 30 km

Total time = 1 + 5 = 6 hours

:. Average speed = 30/6 = 5 km/hour



## Mistake Point

As the distance is different therefore, we will not use the below formula.

Average Speed = (2 × S1 × S2)/(S1 + S2) where S1 and S2 are different speed.



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Two cabs A and B start from C for town D. If the distance between the two towns is 540 km and the slower taxi travelling at an average speed of 90 km/hr takes an hour more than the faster taxi, then find the speed (in km/hr) of the faster taxi.

1. 117

2. 126

3. 108

4. 99

# Answer (Detailed Solution Below)

Option 3:108

# Average Speed MCQ Question 10 Detailed Solution

## Given:

Distance = 540km, Speed of the slower car = 90km/hr, faster car take 1 hour less then slower car to cover the same distance.

## Formula:

Distance = speed × time

Calculation

Time taken by slower car = Distance/speed

⇒ Time = 540/90 = 6hrs

.. Fast car takes 5 hour to cover the distance

:. Speed = 540/ 5 = 108 km/hr