L15 : Time Speed and Distance

1-Tut : Conversion

Send Feedback

5km/hr=?

Options

This problem has only one correct answer

25/6 m/s
50/3 m/s
25/18 m/s
25/4 m/s

Correct Answer : C

Solution Description

5 km/hr= 5×5/18=25/18 m/s

2-Tut : Calculate Speed

Send Feedback

An athlete runs 200 metres race in 24 seconds. His speed (in km/ hr) is :

Options

This problem has only one correct answer

20
24
28.5
30

Correct Answer : D

Solution Description

200 meters= 0.2 km
24 seconds= 24/(60×60) hours

Required speed= 0.2/(24/(60×60))=30 km/hr. Hence, option (d) is correct.

3-Tut : Calculate Time

Send Feedback

If a man covers 100 km in 10 hours, then how much time would he take to cover 150 km distance at the same speed?

Options

This problem has only one correct answer

15 hours

20 hours
12 hours
None Of These

Correct Answer : A

Solution Description

As the speed is constant, hence time is directly proportional to distance.

100/150=10/t on solving we get t= 15 hours.

4-Tut : Time To Cover Distance

Send Feedback

A man covers a particular distance in 10 hours at a speed of 20 kmph. If he increases his speed by 50% then in what time would he take to cover the same distance?

Options

This problem has only one correct answer

6.67 hours
7 hours
8 hours
None Of These

Correct Answer : A

Solution Description

As the distance is constant and
speed ~ 1/time
Speed 1/ Speed 2= Time 2/ Time 1
20/30= time 2/10

Time 2= 20/3= 6.67 hours. Hence, option (a) is correct.

5-Tut : How early will reach?

Send Feedback

If a man walks 20 km at 5 km/ hr, he will be late by 40 minutes. If he walks at 8 km/hr, how early from the fixed time will he reach?

Options

This problem has only one correct answer

15 minutes
25 minutes
50 minutes
1.5 hours

Correct Answer : C

Solution Description

Let the correct time to reach at ‘t’ minutes.
t= 20/5-40/60= 4-2/3=10/3 hours or 200 minutes.

Total time required to cover 20km at 8 kmph= 20/8= 2.5 hours = 150 minutes.

Required time= 200- 150= 50 minutes. Hence, option (c) is correct.

6-Tut : Distance To School

Send Feedback

A boy is late by 9 minutes if he walks to school at a speed of 4 km/hour. If he walks at the rate of 5 km/hour, he arrives 9 minutes early. The distance to his school is

Options

This problem has only one correct answer

9 km
5 km
4 km
6 km

Correct Answer : D

Solution Description

Let the time taken by boy to reach school on time be ‘t’ hours.
According to the question:
4((t+9)/60) = 5((t-9)/60)
t= 36/60+45/60=81/60 hours.

Required distance= 4(t+ 9/60)=4(81/60+9/60)=4×90/60=6 km. Hence, option (d) is correct.

7-Tut : Distance Between A and B

Send Feedback

A train covers a distance between station A and station B in 45 minutes. If the speed of the train is reduced by 5 km/hr, then the same distance is covered in 48 minutes. The distance between station A and B is

Options

This problem has only one correct answer

60 km
64 km
80 km
55 km

Correct Answer : A

Solution Description

Let the distance between Station A and B be ‘d’ km and the original velocity of the train be ‘v’ kmph.
According to the question:
d/v=45/60 or v=(4/3)*d and d/(v-5)=48/60 or v-5=5d/4

On solving the above two equations we get: d=60 km. Hence, option (a) is correct.

8-Tut : Time of Apart

Send Feedback

Two persons ride towards each other from two places 55 km apart, one riding at 12km/hr and the other at 10 km/hr. In what time will they be 11 km apart?

Options

This problem has only one correct answer

2 hours and 30 minutes
1 hour and 30 minutes
2 hours
2 hours and 45 minutes

Correct Answer : C

Solution Description

Relative speed of two persons= 12+ 10= 22 kmph.
Relative distance covered by them= 55- 11= 44 km.

Required time= 44/22= 2 hours. Hence, option (c) is correct.

9-Tut : Time When They Meet

Send Feedback

The distance between two cities A and B is 330 km. A train starts from A at 8 a.m. and travelstowards B at 60 km/hr. Another train starts from B at 9 a.m. and travels towards A at 75 km/hr. At what time do they meet?

Options

This problem has only one correct answer

10 a.m.
10 30 a.m
11 a.m.
11 30 a.m

Correct Answer : C

Solution Description

At 9 A.M. distance between two trains= 330- 60=270 km

Relative speed of both trains= 60+ 75=135 km/hr.

Now, both trains would meet after 270/135= 2 hours. Hence, option (c) is correct.

10-Tut : Speed Of Truck

Send Feedback

A bus moving at a speed of 45 km/hr overtakes a truck 150 metres ahead going in the same direction in 30 seconds. The speed of the truck is

Options

This problem has only one correct answer

27 km/hr
24 km/hr
25 km/hr
28 km/hr

Correct Answer : A

Solution Description

Relative speed of Bus and Truck= 150/30= 5 m/s or 18 kmph.
Speed of bus- speed of truck= 18
45- Speed of truck= 18

Speed of truck= 45- 18= 27 kmph. Hence, option (a) is correct.

11-Tut : Time Required

Send Feedback

The distance between two cities A and B is 100km. and the speeds of Ram and Anuj are 15 km/h and 25km/h respectively. Initially both are at A and start moving toward B. If they move between A and B to and fro then answer the question:

Find the time required for the 1st meeting.

Options

This problem has only one correct answer

3h
4h
5h
None Of These

Correct Answer : C

Solution Description

The total distance covered by Anuj and Ram at the 1st meeting= 200km.
Combined speed of Anuj and Ram = 15km/h+ 25km/h= 40km/h

Time required for the 1st meeting = 200/ 40 = 5 h. Hence, option (c) is correct.

12-Tut : Distance Covered

Send Feedback

The distance between two cities A and B is 100km. and the speeds of Ram and Anuj are 15 km/h and 25km/h respectively. Initially both are at A and start moving toward B. If they move between A and B to and fro then answer the question:

Distance covered by Anuj in 1st meeting.

Options

This problem has only one correct answer

125 km
150 km
250 km
None Of These

Correct Answer : A

Solution Description

Distance covered by Anuj in 1st meeting = 25×5=125km. Hence, option (a) is correct.

13-Tut : Ratio Of Distance

Send Feedback

The distance between two cities A and B is 100km. and the speeds of Ram and Anuj are 15 km/h and 25km/h respectively. Initially both are at A and start moving toward B. If they move between A and B to and fro then answer the question:

Ratio of distance covered at the 4th meeting.

Options

This problem has only one correct answer

2:3
3:5
2:5
None Of These

Correct Answer : B

Solution Description

Ratio of distance covered by Ram and Anuj is always in the ratio of their speeds. So the required ratio = 15: 25 = 3: 5. Hence, option (b) is correct.

14-Tut : Time Required

Send Feedback

The distance between two cities A and B is 100km and the speeds of Ram and Anuj are 15 km/h and 25km/h respectively. Initially Ram is at A & Anuj is at B. If they move between A and B to and from then answer the question:

The time required for the 1st meeting.

Options

This problem has only one correct answer

2h
1h
3h
None Of These

Correct Answer : D

Solution Description

Distance covered by Ram and Anuj together till the 1st meeting = 100km

Total combined speed of Ram and Anuj = 15kmph + 25kmph = 40kmph

Total time required for the 1st meeting = 100/40 = 2.5 hours. Hence, option (d) is correct.

15-Tut : Distance Covered By Anuj

Send Feedback

The distance between two cities A and B is 100km and the speeds of Ram and Anuj are 15 km/h and 25km/h respectively. Initially Ram is at A & Anuj is at B. If they move between A and B to and from then answer the following questions:

Distance covered by Anuj till the 3rd meeting.

Options

This problem has only one correct answer

250 km
212.5 km
312.5 km
180 km.

Correct Answer : A

Solution Description

At start, Ram is at A and Anuj is at B.
After 1st meeting, Anuj will travel 25*4 = 100 km and Ram will travel 15*4 = 60 km.
Now, Ram is 40 km away from B, and Anuj is at A.
After 2nd meeting, Anuj will reach B and Ram will now be 20 km from B, after travelling 60 kms.
Now, using relative speed concept. Let's assume Ram's speed 0 km/h and Anuj's speed = (25 - 15) km/hr = 10 km/h
The time required for 20 km = 2 hours.
Hence, finally Anuj will take (25*2)kms more till 3rd meeting.

Therefore, the final distance will be = 100 + 100 + 50 = 250 kms.

16-Tut : Meet for The First Time

Send Feedback

A and B are running on a circular track of length 1000 m. Speed of A is 25 m/s and speed of B is 10 m/s. They start from the same point at the same time in the opposite directions. When will they meet for the first time at the starting point again?

Options

This problem has only one correct answer

200 s
100 s
50 s
250 s

Correct Answer : A

Solution Description

Time taken by A to complete one round= 1000/25= 40 s

Time taken by B to complete one round= 1000/10= 100 s

First meeting at the starting point will happen after LCM of 40 and 100= 200 s.

Hence they will meet after 200 s. hence, option (a) is correct.

17-Tut : When they be together

Send Feedback

A, B and C run on a circular path at a speed of 5 m/s, 10 m/s, 20 m/s ,A and B are moving in the same direction and C in the opposite direction. The circumference of the path is 6 km. If they start from the same point at the same time then when will they be together again for the 1st time?

Options

This problem has only one correct answer

1200 s
400 s
800 s
200 s

Correct Answer : A

Solution Description

C meets B after every = 6000/(20+10)=200 s
C meets A after every = 6000/(20+5)=240 s
Therefore they will meet each other for the 1st time after= LCM (200, 240) = 1200 s

Hence, option (a) is correct.

18-Tut : For the first time

Send Feedback

A, B and C run on a circular path at a speed of 5 m/s, 10 m/s, 20 m/s ,A and B are moving in the same direction and C in the opposite direction. The circumference of the path is 6 km. When will they be together again for the 1st time at the starting point?

Options

This problem has only one correct answer

1200s
400s
800s
200s

Correct Answer : A

Solution Description

Time taken by A to complete one round = 6000/5=1200 s
Time taken by B to complete one round = 6000/10=600 s
Time taken by C to complete one round = 6000/20=300 s

So they will be together again for the 1st time at the starting point after: LCM (1200, 600, 300) = 1200 s. Hence, option (a) is correct.