MATHS

BOOKS - ARIHANT PUBLICATION BIHAR

TIME AND DISTANCE

Solved Examples

1. A 100 m long train is moving at a speed of 60 km/h. Then, the train will cross a signal pole

in

A. 3s

B. 6s

C. 4s

D. 10s

Answer: B

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2. Two trains 130 m and 110 m in length are running towards each other on parallel tracks, one at the rate of 32 km/h and another at 40 km/h. In what time will they be clear each other from the moment they meet?

A. 5s

B. 25s

C. 10s

D. 12s

Answer: D

3. Two trains 132 m and 108 m long are running in opposite direction, one at the speed of 32 km/h and another at the speed of 40 km/h. In what time will they cross each other?

A. 12s

B. 30s

C. 22s

D. 3s

Answer: A

4. A sailor goes 8 km downstream in 40 minutes and returns in 1 hours. Determine the speed of the sailor in still water and the speed of the current.

A. 20 km/h, 10 km/h

B. 10 km/h, 2 km/h

C. 10 km/h, 5 km/h

D. 2 km/h, 12 km/h

Answer: B

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5. The speed of boat upstream and speed of boat downstream are 7 km/h and 13 km/h, respectively. Find the speed of stream and speed of boat in still water.

A. 5 km/h, 10 km/h

B. 10 km/h, 5 km/h

C. 10 km/h, 3 km/h

D. 13 km/h, 3 km/h

Answer: C

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Exam Booster For Cracking Exam

1. Kiran covers a certain distance 80 km/h and returns back to the same point at 20 km/h. Then, the average speed during the whole journey be

    A. 35 km/h

    B. 32 km/h

    C. 30 km/h

    D. 28 km/h

Answer: B

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2. Normally Sarita takes 3 h to travel between two stations with a constant speed. One day her speed was reduced by 12 km/h and she took 45 min more to complete the journey. Then, the distance between the two stations is

A. 60 km

B. 120 km

C. 180 km

D. 95 km

Answer: C

3. A man travels 50 km at speed 25 km/hr and next 40 km at 20 km/h and there after travels 90 km at 15 km/h. His average speed is :

A. 18

B. 5

C. 10

D. 36

Answer: B

4. A boy is running at a speed of p km/h to cover a distance of 1 km but due to the slippery ground, his speed is reduced by q km/h (where, p>q). If he takes r hours to cover the distance, then

A. $\dfrac{1}{r} = \dfrac{pq}{p+q}$

B. $\dfrac{1}{r} = p+q$

C. $r = p - q$

D. $\dfrac{1}{r} = p - q$

Answer: D

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5. A train passes telegraph post in 40s moving at a rate of 36 km/h. Then, the length of the train is

A. 400 m

B. 500 m

C. 450 m

D. 395 m

Answer: A

6. If train number 4625 is 250 m long crosses a pole in 15 s. Then, the speed of the train (in km/h) is

A. 30

B. 55

C. 60

D. 90

Answer: C

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7. A man rows upstream 13 km and downstream 28 km talking 5 hrs each time. What is the velocity in (km/hr) of the current?

A. 1.5 km/h

B. 4.1 km/h

C. 5.6 km/h

D. None of these

Answer: A

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8. A car is ahead of a scooter by 30 km, car goes at the rate of 50 km an hour and the

scooter goes at the rate of 60 km an hour. The

scooter overtake the car after

A. 3 h

B. 3.5 h

C. 4 h

D. $3\dfrac{1}{4}$ h

Answer: A

9. The average speed (correct to one place of decimal) of a train running at the rate of 30 km/h during the first 100 km at 40 km/h during the second 100 km at 50 km/h during the third 100 km is

A. 38.1 km/h

B. 38.2 km/h

C. 38.3 km/h

D. 38.5 km/h

Answer: C

10. A train 700 m long is running at the speed of 72 km/h. If it crosses a tunnel in 1 min, then the length of the tunnel (in m) is

A. 500

B. 525

C. 515

D. 505

Answer: A

11. A car completes a journey in 6 h with a speed of 50 km/h. At what speed must it travel to complete the journey in 5 h?

A. 50 km/h

B. 60 km/h

C. 25 km/h

D. None of these

Answer: B

12. Rani goes to school at 10 km/h and reaches the school 6 min late. Next day, she covers the distance at 12 km/h and reaches the school 9 min earlier than the scheduled time. What is the distance of her school from her house?

A. 15 km

B. 16 km

C. 60 km

D. None of these

13. A person can run around a circular path of radius 21 meters in 44 s. In what time will the same person run a distance of 8 km?

A. 15 min

B. 16 min

C. 16 min 45 s

D. None of these

Answer: D

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14. A train covers a distance in 50 min, if it runs at a speed of 48 km/h on an average. The speed at which the train must run to reduce the time of journey to 40 min is

A. 60 km/h

B. 55 km/h

C. 40 km/h

D. None of these

Answer: A

15. By walking at $\dfrac{4}{3}$ of his usual speed, a man reaches his office 25 min earlier than usual. What is his usual time is?

A. 100 min

B. 125 min

C. 25 min

D. 40 min

Answer: A

16. A man, on tour, travels first 160 km at 64 km/h and the next 160 km at 80 km/h. The

average speed for the first 320 km of the tour

is

A. 71 km/h

B. 71.11 km/h

C. 72 km/h

D. 72.12 km/h

Answer: B

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17. A certain distance is covered at a certain speed. If half of this distance is covered in triple the time, the ratio of the two speeds is

    A. $5:1$

    B. $2:1$

    C. $6:1$

    D. None of these

Answer: C

18. A bullock cart has to cover a distance of 80 km in 10 h. If it covers half of the journey in 3/5th time, what should be its speed to cover the remaining distance in the time left?

A. 40 km/h

B. 4 km/h

C. 10 km/h

D. None of these

Answer: C

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19. A motorboat takes 2 hours to travel a distance of 9 km down the current and it takes 6 hours to travel the same distance against the current. What is the speed of the boat in still water in kmph?

A. 3 km/h

B. 5 km/h

C. 2 km/h

D. None of these

Answer: A

20. A man standing on a railway platform observes that a train going in one direction takes 4 s to pass him. Another train of same length going in the opposite direction takes 5 s to pass him. The time taken (in s) by the two trains to cross each other is

A. 40

B. 40/9

C. 22500

D. 36

Answer: B

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21. Assume that the distance that a car runs on one litre of petrol varies inversely as the square of the speed at which it is driven. It gives a run of 9 km per litre at speed of 30

km/h. At what speed should it be driven to get a run of 100 km/L?

A. 150 km/h

B. 225 km/h

C. 36 km/h

D. 9 km/h

Answer: D

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22. A student walks from his house at 3 km/h and reaches his school 5 min late. If his speed had been 7 km/h he would have reached 10 min early. The distance of his school from his house is.

A. 12.5 km

B. 12 km

C. $\dfrac{21}{16}$ km

D. None of these

Answer: A

23. Points A and B are 120 km apart on a highway. A car starts from A and another car starts from B at the same time. If they travel in the same direction they meet in 9 h but if they travel towards each other they meet in 2 h. What are the speeds of the cars?

A. 40 km/h, 40 km/h

B. 30 km/h, 30 km/h

C. 40 km/h, 20 km/h

D. None of these

Answer: C

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24. A police car is ordered to chase a speeding

car that is 10 km ahead. The car is travelling at

an average speed of 40 km/h and the police

car pursues it at an average speed of 50 km/h.

How long does it take for the police car to

overtake the other car?

A. 60 min

B. 16 min

C. 17 min

D. 20 min

Answer: A

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25. Two towns A and B are 100 km apart. A bus starts from A to B at 7 am at a speed of 20 km/h. Another bus starts from B to A at 8 am

at a speed of 30 km/h. The time of their

meeting is

A. 9 am

B. 9 : 36 am

C. 10 am

D. 9 pm

Answer: A