

5. Time, Speed and Distance

1. Convert 55 m/sec into km/h.
a. 198 kmph b. 11 kmph c. $15\frac{5}{18}$ kmph d. 19 kmph
 2. A man covers 10.2 km in 3 hrs, the distance covered by him in 5 hrs is
a. 18 km b. 15 km c. 16 km d. 17 km
 3. A person travels from P to Q at a speed of 40 kmph and returns by increasing his speed by 50%. What is his average speed for both the trips?
a. 36 kmph b. 45 kmph c. 48 kmph d. 50 kmph
 4. An express train travelled at an average speed of 100 kmph, stopping for 3 minutes after every 75 km. How long did it take to reach its destination 600 km from the starting point? a. 6 hrs 21' b. 6 hrs 24' c. 6 hrs 27' d. 6 hrs 30'
 5. A train can travel 50% faster than a car. Both start from the point A at the same time and reach point B 75 kms away from A at the same time. On the way, however the train lost about 12.5 minutes while stopping at the stations. The speed of the car is
a. 100 kmph b. 110 kmph c. 120 kmph d. 180 kmph
 6. In covering a distance of 30 km, Abhay takes 2 hrs more than Sameer. If Abhay doubles his speed, then he would take 1 hr less than Sameer. Abhay speed is a. 5 kmph b. 6 kmph c. 6.25 kmph d. 7.5 kmph
 7. In a flight of 600 km, an aircraft was slowed down due to bad weather. Its average speed for the trip was reduced by 200 kmph and the time of flight increased by 30 minutes. The duration of the flight is a. 1 hr b. 2 hrs c. 3 hrs d. 4 hrs
 8. If the distance travelled (d) by a particle in time t in seconds is given by the formula $d(t) = 4 + 3t + 2t^2 + t^3$, then what is the distance travelled by the particle in the 5th second? a. 72 meters b. 82 meters c. 90 meters d. 83 meters
 9. If I walk with 30 miles/hr, I reach 1 hour before and if I walk with 20 miles/hr I reach 1 hour late. Find the distance between the two points and the exact time of reaching the destination is 11 am then find the speed with which I should walk.
a. 80 miles & 20 m/hr b. 150 miles & 24 m/hr c. 120 miles & 24 m/hr d. 80 miles & 24 m/hr
 10. By walking at $\frac{3}{4}$ th of his usual speed, a man reaches office 20 minutes later than usual. What is his usual time?
a. 30 min b. 60 min c. 70 min d. 50 min
- For Questions 11 to 16: A train 110 m long travels at 60 kmph. How long does it take?**
11. To pass a telegraph post by the side of the track a. 6.5 sec b. 6.6 sec c. 6.7 sec d. 6.8 sec
 12. To pass a man running at 6 kmph in the same direction as the train? a. $6\frac{1}{3}$ sec b. $7\frac{1}{3}$ sec c. $8\frac{1}{3}$ sec d. 9 sec
 13. To pass a man running at 6 kmph in the opposite direction? a. 6 sec b. 7 sec c. 8 sec d. 9 sec
 14. To pass a station platform 240 m long? a. 21 sec b. 20 sec c. 19 sec d. 18 sec
 15. To pass another train 170 m long, at 40 kmph in the same direction? a. 50.4 sec b. 50.3 sec c. 50.1 sec d. 50 sec
 16. To pass another train 170 m long, at 60 kmph in the opposite direction? a. 8.0 sec b. 8.2 sec c. 8.4 sec d. 8.8 sec
17. A ship travelled 8100 km from the port. At that moment a jet plane, whose speed is 10 times the speed of the ship took off from the port. After how much distance will the plane overtake the ship? a. 10000 kms b. 9900 kms c. 9743 kms d. 9000 kms
 18. Train A crosses a pole in 20 seconds and crosses a train B of length 200 m in 20 seconds. Find the speed of train B?
a. 20 m/s b. 10 m/s c. 15 m/s d. 25 m/s
 19. When I left home for office on a particular day my father's watch showed 7:00 PM, and when I reached my office my watch showed 7:50 PM. Next day in the morning when my father's watch showed 6:00 AM, my watch showed 7:30 AM. If my father's watch runs at normal speed and my watch gains 5 minutes per hour, then the time taken by me to reach my office from home, on that day, was closest
a. 15' b. 13' 38" c. 13' 50" d. 14' 50"
 20. Two cars, one moving towards north and the other towards east, leave the same place at the same time. The speed of one of them is greater than that of the other by 5 km per hour. At the end of two hours they are at a distance of 50 km from each other. Find the speed of car having a lower speed
a. 20 km/hr b. 12 km/hr c. 15 km/hr d. 10 km/hr
 21. I row from A to B against the current in 8 hrs and B to A in 2 hrs. If the speed of the river is 9 m/sec, what is the speed of the boat in still water?
a. 15 m/sec b. 18 m/sec c. 22 m/sec d. 12 m/sec
 22. Two boats travel in opposite directions of a river, one upstream and the other downstream. The speed of each boat in still water is 10 kmph and the speed of the current is 2 kmph. If the length of the river is 100 km, then when will the boats meet?
a. 5 hrs b. 6 hrs c. 4 hrs d. 7.5 hrs

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23. The speed of a boat in still water is 12 kmph and the speed of the current is 3 kmph. How far can a boat travel upstream and downstream 10 hours?
a. 56 $\frac{1}{4}$ km b. 60 km c. 58 km d. 54 $\frac{1}{4}$ km
24. A man can row upstream 36 km in 6 hours. If the speed of man in still water is 8 km/hr, find how much he can go downstream in 10 hours?
a. 400 km b. 300 km c. 200 km d. 100 km
25. A man rows to a place 48 km distant and back in 14 hours. He finds that he can row 4 km with the stream in the same time as 3 km against the stream. Find the rate of stream?
a. 1 km/hr b. 2 km/hr c. 3 km/hr d. 4 km/hr
26. An artillery gun is fired twice at the interval of 24 seconds. A motorist moving towards the gun heard the sounds of gunfire at an interval of 22 seconds. If the speed of sound is 330 m/s then what is the speed of the bike?
a. 25 m/s b. 28 m/s c. 26 m/s d. 30 m/s
27. The length of a swimming pool is 100 m. A and B start swimming from opposite ends of the length of the pool and return after reaching an end. If the speed of A and B are 10 m/s and 15 m/s respectively, then how many times do they meet, when A travels 1000 m?
a. 13 b. 12 c. 14 d. 11
28. Akhil overtakes Nikhil at 6 am when both are travelling towards city P. Akhil reaches P at 9 am and starts on the return journey after one hour. On the way back he meets Nikhil at 11 am. At what time will Nikhil reach P?
a. 1 pm b. 1:30pm c. 1:45 pm d. 2:05 pm
29. A boy of height 100 cm starts walking along a straight line away from the base of a lamppost at a speed of 1.4 m/s. If the lamp is 42 m above the ground, find the length (in cm) of the boy's shadow after 40 seconds
a. 130 b. 132.6 c. 135 d. 136.6
30. A cat, on seeing a dog 100 m away turns around and starts running away at 24 kmph. The dog spots him one min later and starts chasing the cat at 33 kmph. After how much time, from the start of the cat's run, will the chase end?
a. 160 sec b. 225 sec c. 260 sec d. 200 sec
31. Two trains are travelling in opposite directions with a speed of 27 kmph each. A bird starts flying in between the trains when they are separated by a distance of 600 km. If the speed of the bird is 45 kmph then what is the distance travelled by the bird by the time the trains collide?
a. 150 km b. 210 km c. 200 km d. 500 km
32. An escalator is moving downwards. A takes 30 steps to reach the bottom from the top and B takes 70 steps to reach the top from the bottom. The speeds of A and B are equal. What is the total number of steps in the escalator from bottom to top?
a. 55 b. 42 c. 50 d. 45
33. Ramu and Raju are moving down an escalator. Ramu takes 50 steps and Raju takes 75 steps while the escalator is moving down. If the time taken by Ramu to take 1 step is equal to the time taken by Raju to take 3 steps, then find the number of steps in the escalator from bottom to the top?
a. 100 b. 150 c. 120 d. 125
34. Buvika walks up a staircase. She finds that if she walks up 25 steps, she requires 11 seconds more to reach the top and if she walks up 40 steps she needs only 8 seconds more to reach the top. Find the number of steps in the stair case.
a. 100 b. 125 c. 75 d. 80
35. A takes 60 steps to reach the bottom of an escalator which is moving upwards. B takes 30 steps to reach the top of the escalator. If A takes 2 steps for every step of B, then find the number of steps in the escalator.
a. 45 b. 40 c. 47 d. 50
36. In a race between Teja, Pooja and Roja, for every 10 steps of Teja, Pooja takes 12 steps and Roja takes 11 steps. If the distance travelled by Teja in 6 steps is equal to the distance travelled by Pooja in 8 steps or the distance travelled by Roja in 7 steps, who won the race?
a. Teja b. Pooja c. Roja d. cannot be determined
37. A takes 10 strides to 7 strides of B. If one stride of A is 2 m and one stride of B is 2.5 m and B gets a start of 35 m, then what distance should A travel to overtake B?
a. 280 m b. 240 m c. 200 m d. 350 m
38. In a 1000m race, A beats B by 50m or 10 seconds. Find the speed of A.
a. 5 m/s b. 5 $\frac{2}{9}$ m/s c. 5 $\frac{5}{19}$ m/s d. 6 m/s
39. A, B & C participate in a 100m race. A beats B by 20m and B beats C by 10m. By how many meters does A beat C?
a. 30 m b. 25 m c. 22 m d. 28 m
40. In a 100 meters race, A starts from 10 meters behind B and beats B by 10 meters. If B starts from 10 meters behind the start line then by how many meters does A beat B?
a. 30 b. 19 c. 18 $\frac{2}{11}$ d. 28 $\frac{2}{11}$

Directions for Questions 41 to 45: Aditya can run one full round of a circular track in 6 minutes and Advaita can run one full round in 10 minutes. If both Aditya and Advaita start simultaneously from the same starting point.

41. Find when they would meet at the starting point for the first time?
a. 30' b. 45' c. 60' d. 75'
42. Find when they would meet for the first time if they are running in the same direction?
a. 10' b. 15' c. 20' d. 30'
43. Find when they would meet for the first time if they are running in the opposite direction?
a. 2' b. 3' 30" c. 3' 45" d. 4' 20"

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44. Find how many times would they met in the time Advaita has completed 12 rounds when running in the same direction?

- a. 6 b. 11 c. 8 d. 12

45. Find how many times would they met in the time Advaita has completed 12 rounds when running in the opposite direction?

- a. 18 b. 60 c. 20 d. 32
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