

TIME, SPEED & DISTANCE

(Ref: FM-QAH2022006)

Basics

- Convert the following speeds into meters per second
 (a) 54 km/hr
 a) 10 b) 12 c) 15 d) 20
 (b) 12.6 km/hr
 a) 3.5 b) 4 c) 0.35 d) 6
- If Ram runs at 6 meters per second. What distance (in km) will he cover in 3 hours and 45 minutes?
 a) 81 b) 54 c) 108 d) 27
- A can complete a journey in 10 hours. He travels first half of the journey at the rate of 21 km/hr and second half at the rate of 24 km/hr. Find the total journey in km.
 a) 220 km b) 224 km
 c) 230 km d) 234 km

Variation

- The ratio of the speeds of P, Q and R is 3 : 4 : 6. Find the ratio of the time that they take to travel a certain distance.
 a) 2 : 3 : 4 b) 6 : 4 : 3
 c) 4 : 3 : 2 d) 3 : 4 : 6
- Sandeep saves 6 minutes by increasing his speed by 25%. What is the time taken to cover the distance at his usual speed? (in minutes)
- Traveling at 5/6th of his usual speed Ashish is 10 minutes late. What is the usual time he takes to cover the same distance?
 a) 50 minutes b) 70 minutes
 c) 1 hour d) 75 minutes
- If Ram travels at 30 kmph, he reaches his destination at 4 p.m., and if he increases his speed to 40 kmph he reaches one hour earlier. Find the distance he has to travel to reach his destination.
- If Amit increases his speed by 25%, he reaches office 12 minutes early. Find the time taken by the person to reach his office if he decreases his speed by 25%.
- The distance between Lucknow and Pune is 1440 km. Two persons A and B started simultaneously from Lucknow towards Pune. B took 6 hours less than A to reach Pune. Instead, if A travels at twice his speed, he reaches Pune 6 hours earlier than B. Find the speed of B (in kmph).
- A and B are two stations 630 km apart. P starts from A and moves towards B at 90 km/hr. Q starts from B at the same time and moves towards A at 120 km/hr. Find the extra distance traveled by Q when they meet.

Average Speed

- Amit left A and reached B in 4 hours. His average speed for the journey was 90 kmph. Find the distance between A and B (in km).

- Shiva travelled for 2.5 hours at 40 kmph and for another 2.5 hours at 60 kmph. Find his average speed for the journey (in kmph).
 a) 50 b) 48 c) 54 d) 60
- Kapil travelled for 3 hours at 40 kmph and then for 5 hours at 60 kmph. Find his average speed (in kmph) for the journey.
 a) 50 b) 48 c) 52.5 d) 42
- Ram travels a certain distance at a speed of 40 km/hr and returns to the starting point at a speed of 60 km/hr. What is his average speed for the entire trip?
- Anurag covers a distance in the following manner. He covers the first half of the distance at 50 kmph, 40% of the remaining at 40 kmph and the remaining distance at 60 kmph. Find his average speed over the entire journey.
- Ram travel part of a journey at 45 km/hr and rest of the journey at 60 km/hr. if he covers a total of 300 km in a total of 6 hrs. find the distance covered at the two different speed.
- Pankaj went to the post-office at the speed of 60 km/hr while returning for his home he covered the half of the distance at the speed of 10 km/hr, but suddenly he realized that he was getting late so he increased the speed and reached the home by covering rest half of the distance at the speed of 30 km/hr. The average speed of the Pankaj in the whole length of journey is:
 a) 5.67 km/hr b) 24 km/hr
 c) 22.88 km/hr d) 5.45 km/hr
- Akash travel for first 100 kms at a speed of 50 km/hr, the next 1 hour at a speed of 40 kmph and the rest of the journey at a speed of 60 kmph. If the average speed of entire journey is 52 km/hr, find the duration and distance of entire journey.

Relative Speed

- P and Q are 270 km apart. At 9:00 a.m., buses A and B left P and Q for Q and P respectively. If the speeds of A and B are 50 kmph and 40 kmph respectively, find their meeting time.
 a) 10:00 a.m. b) 12:00 p.m.
 c) 3:00 p.m. d) 11:00 a.m.
- Car A left P for Q at 9:00 a.m. Car B left Q for P at 10:00 a.m. PQ = 180 km. Speeds of A and B are 30 kmph and 20 kmph respectively. Find their meeting time.
 a) 1:30 p.m. b) 1:00 p.m.
 c) 12:30 p.m. d) 3:00 p.m.
- Train P started from town A towards town B at 7:00 a.m. and reached B at 3:00 p.m. Train Q started from B towards A at 8:00 a.m. and reached A at 4:00 p.m. At what time did both the trains cross each other?
- Mukesh is a thief. He steals a Mobile from Ram's house and escapes on his bike at 7:00 a.m. at a speed of 40 kmph. At 8:00 a.m., Ram realizes that there had been a burglary and immediately starts chasing Mukesh on his Car at a speed of 60 kmph.

- a) At what time will Ram catch up with Mukesh?
b) What is the distance covered by Mukesh before he was caught?
23. A and B start running simultaneously from P and Q, towards Q and P respectively. They meet each other after a certain time 't'. Thereafter A and B take 16 seconds and 25 seconds to reach their respective destinations. If A's speed was 12 m/s, find the distance between P and Q.
24. Points A and B are 70 km apart on a highway. One car starts from A and the another one from B at the same time. If they travel in the same direction, they meet in 7 hours. But if they travel towards each other, they meet in one hour. The speeds of the two cars are, respectively.
a) 45 and 25 km/h b) 70 and 10 km/h
c) 40 and 30 km/h d) 60 and 40 km/h
25. What is the time taken by a train 1000 m long to cross an electric pole, If the speed of the train is 50 km/hr?
a) 60 sec b) 80 sec c) 75 sec d) 72 sec
26. What is the time taken by a train 650 m long travelling at 36 km/hr to cross a 750 m long platform?
a) 140 sec b) 130 sec
c) 70 sec d) 120 sec
27. How long will a train 150 m long travelling at 90 kmph take to cross a train 200 m long travelling at 36 kmph in the opposite direction?
a) 20 sec b) 22 sec
c) 30 sec d) 10 sec
28. Two trains each of 120 m in length, run in opposite directions with a velocity of 40 m/s and 20 m/s respectively. How long will it take for the tail ends of the two trains to meet each other during the course of their journey?
a) 20 s b) 3 s c) 4 s d) 5 s
29. A man sitting in a train travelling at the rate of 50 km/hr observes that it takes 9 sec for a goods train travelling in the opposite direction to pass him. If the goods train is 187.5 m long, find its speed.
a) 40 km/hr b) 25 km/hr
c) 35 km/hr d) 36 km/hr
30. Shivam can row a boat in still water at a speed of 5 kmph. The speed of the stream is 3 kmph. Find the time taken by him to row 120 km downstream (in hours).
31. Speed of a speed-boat when moving in the direction parallel to the direction of the current is 16 km/hr. Speed of the current is 3 km/hr. So the speed of the boat against the current will be (in km/hr)
a) 22 b) 9.5 c) 10 d) None
32. A boat travels upstream from B to A and downstream from A to B in 3 hours. If the speed of the boat in still water is 9 km/hr and the speed of the current is 3 km/hr, the distance between A and B is
a) 4 km b) 8 km c) 6 km d) 12 km
33. A motor boat can travel at 10 km/h in still water. It traveled 91 km downstream in a river and then returned, taking altogether 20 hours. Find the rate of flow of the river.
a) 6 km/hr b) 5 km/hr
c) 8 km/hr d) 3 km/hr
34. A boat goes 24 km upstream and 28 km downstream in 6 hours. It goes 30 km upstream and 21 km downstream in 6 hours and 30 minutes. The speed of the boat in still water is
a) 10 km/h b) 4 km/h
c) 14 km/h d) 6 km/h
35. A man can row 4.5 km/hr in still water and he finds that it takes him twice as long to row up as to row down the river. Find the rate of the stream.
a) 1.5 km/hr b) 2 km/hr
c) 2.5 km/hr d) 1.75 km/hr
36. Atul takes 40 seconds to climb up a 'moving up' escalator and 60 seconds to move down the same 'moving up' escalator. How long will Atul take to move up the escalator when it is switched off?
37. An escalator was moving up from floor A to floor B. It had 240 steps. Bimal took 24 seconds to walk up on it. If his speed doubled and that of the escalator tripled, he would have taken only ten seconds to walk up on it. Find the time he would take to go from floor B to floor A using the escalator (in seconds).
38. A building had two floors. There were 180 steps from the first floor to the second floor. An escalator was moving up from the first floor to the second floor. Arya took ten seconds to walk from the first floor to the second floor on it. He took 60 seconds to return to the first floor on it. Find the time he would have taken to return if the escalator had been switched off (in seconds)

Boat and Stream, Escalators

Answer Key..

1.) a) C b) a	5.) 30min	9.) 80km/h	13.) C	17.) B	21.) 11:30AM	25.) D	29.) B	33.) D	37.) 120 S
2.) A	6.) A	10.) 90 km	14.) 48 km/h	18.) 5 hrs	22.) 120 KM	26.) A	30.) 15	34.) A	38.) 120/7 sec
3.) B	7.) 120 KM	11.) 360 km	15.) 600/13 km/h	19.) B	23.) 432m	27.) D	31.) C	35.) A	
4.) C	8.) 80min	12.) A	16.) 180 & 120	20.) B	24.) C	28.) C	32.) D	36.) 48 Sec	