HeMantra EduTech

Math : TIME & DISTANCE

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Formulas:

$$\text{Speed} = \left(\frac{\text{Distance}}{\text{Time}}\right),$$

$$\text{Time} = \left(\frac{\text{Distance}}{\text{Speed}}\right),$$

$$\text{Distance} = (\text{Speed} \times \text{Time})$$

$$x \text{ km/hr} = \left(x \times \frac{5}{18}\right) \text{m/sec}$$

$$x \text{ m/sec} = \left(x \times \frac{18}{5}\right) \text{km/hr}$$

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If the ratio of the speeds of A and B is $a : b$, then the ratio of the times taken by them to cover the same distance is $\frac{1}{a} : \frac{1}{b}$ or $b : a$.

Suppose a man covers a certain distance at x km / hr and an equal distance at y km / hr. Then, the average speed during the whole journey is $\left(\frac{2xy}{x+y}\right)$ km/hr.

Q1.

A train travels 82.6 km/hr. How many metres will it travel in 15 minutes? (E.S.I.C., 2006)

Q2.

. *How many minutes does Aditya take to cover a distance of 400 m, if he runs at a speed of 20 km/hr?*

Q.3.

. *A cyclist covers a distance of 750 m in 2 min 30 sec. What is the speed in km/hr of the cyclist?*

Q.4.

A man walked at a speed of 4 km/hr from point A to B and came back from point B to A at the speed of 6 km/hr. What would be the ratio of the time taken by the man in walking from point A to B to that from point B to A?

Q5. A man walked at a speed of 4 km/hr from point A to B and came back from point B to A at the speed of 6 km/hr. Find the average speed?

Q6.

Peter can cover a certain distance in 1 hr. 24 min. by covering two-third of the distance at 4 kmph and the rest at 5 kmph. Find the total distance.

Q 7.

. *A man travelled from the village to the post-office at the rate of 25 kmph and walked back at the rate of 4 kmph. If the whole journey took 5 hours 48 minutes, find the distance of the post-office from the village.*

Q. 8.

An aeroplane flies along the four sides of a square at the speeds of 100, 200, 300 and 400 km/hr. Find the average speed of the plane around the field. (P.C.S., 2009)

Q9. The ratio of the speeds of X and Y is 2 : 5 . X takes 30 seconds to cover a certain distance. How many seconds will Y take to cover the same distance ?

Q 10. A bus travels a distance of 20 km at a speed of 10 km/hr and a distance of 30 km at a speed of 15 km/hr, then find the average speed of the bus during the entire journey ?

Q 11. A bus travels from Jaipur to Delhi at a speed of 75 km/hr and returns back on the same route at a speed of 60 km/hr. If it takes 40 minutes more in the return journey. Then find out the distance from Jaipur to Delhi ?

Q 12. A student traveling at 5 km/hr reaches school 12 minutes late. If he travels at 6 km/hr. He reaches school 3 min early. Find the distance of school from home.

Q 13. A thief committed a theft at 10 pm. He ran at a speed of 10 km/hr. The police chased the thief 15 min after the theft at a speed of 15 km/hr from the crime scene. When did the police catch the theif ? what distance was it caught?

Q 14.

A and B are two stations 390 km apart. A train starts from A at 10 a.m. and travels towards B at 65 kmph. Another train starts from B at 11 a.m. and travels towards A at 35 kmph. At what time do they meet?

(M.B.A., 2007)

Q 15.

A goods train leaves a station at a certain time and at a fixed speed. After 6 hours, an express train leaves the same station and moves in the same direction at a uniform speed of 90 kmph. This train catches up the goods train in 4 hours. Find the speed of the goods train.

Q 16.

A man takes 6 hours 30 min in going by a cycle and coming back by scooter. He would have lost 2 hours 10 min by going on cycle both ways. How long would it take him to go by scooter both ways?

(M.A.T., 2006)

Q. 17.

By walking at $\frac{3}{4}$ of his usual speed, a man reaches his office 20 minutes later than his usual time. Find the usual time taken by him to reach his office. **(S.S.C., 2010)**

Q 18. A person walking at a speed of 48 km/hr covers a distance in 9 hours. What should be the speed which he should cover the same distance in 8 hours?

Q. 19. A train moving at a speed of 48 km/hr covers a certain distance in 50 min. At which speed will the train have to run to cover this distance in 40 minutes?

Q.1

The value of $72 \div 4 \times \{8 \times 4 - (14 - 19)\}$ is:

666

1296

444

222

Q.2

The value of (919 + 9.019 + 0.919 + 9.0019) is:

937.3999

973.9399

937.9399

973.9939

Q.3.

In a certain code language, RAMESH is written as AREMHS and PRAKIL is written as 'RPKALI'. How will RISHIPAL be written in that language?

ALIPHSRI

IRSHPILA

IRHSPILA

RILAPISH

Q. 4.

SUGAR : 11 :: PILOT : 12 : : HOTEL : ?

15

10

12

19

Q.5.

The value of $84 \div 32 \times 8 - 15 \div 8 \times (19 - 35)$ is:

45

38

51

42

Q.6.

Select the number from among the given options that can replace the question mark (?) in the following series.

18, 27, 34, 39, 42, ?

45

44

42

43

- Thank you -