Explore | Expand | Enrich

Time, speed and distance(basics of TSD)

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POINTS TO REMEMBER

1**. Speed, Time and Distance**

Speed = (Distance/Time)

Time = (Distance/Speed)

Distance = (Speed x Time).

2. km per hr to m per sec conversion x km/hr = (x*5/18) m/sec.

3. m/sec to km/hr conversion x m/sec = (x *18/5) km/hr.

Question: 01

In what time will a railway train 60 m long moving at the rate of 36 kmph pass a telegraph post on its way?

A. 9
B. 8
C. 7
D. 6

Answer: D

Explanation:

T = 60/36 * 18/5

= 6 sec

Question: 02

If a man walks to his office at 3/4 of his usual rate, he reaches office 1/3 of an hour late than usual. What is his usual time to reach office?

A. 1 hour
B. 2 hour
C. 3 hour
D. 4 hour

Answer: A

Explanation:

Speed Ratio = 1:3/4 = 4:3

Time Ratio = 3:4

1 -------- 1/3

3 --------- 1 hour

Question: 03

The ratio between the speed of two trains is 7: 8.If the second train runs 400km in 5 hours. The speed of the first train is

A. 200 km/hr
B. 70 km/hr
C. 250 km/hr
D. 80 km/hr

Answer: B

Explanation:

Let the speed of the first train be 7x km/hr
Then the speed of the second train is 8x km/hr
But speed of the second train = 400/5 km/hr = 80km/hr
=> 8x =80
=> X=10
Hence the speed of first train is (7 x 10)km/hr = 70km/hr

Question: 04

Two trains approach each other at 30 km/hr and 27km/hr from two places 342km apart after how many hours will they meet

A. 2 hours
B. 4 hours
C. 6 hours
D. 8 hours

Answer: C

Explanation:

Suppose the two trains meet after x hours, then

=> 30x + 27x = 342

=> 57x = 342

=> X = 6

So the two trains will meet after 6 hours

Question: 05

A and B are 20 km apart. A can walk at an average speed of 4 km/hr and B at 6 km/h. If they start walking towards each other at 7:000 am, when they will meet?

A. 8.00 am
B. 8.30 am
C. 9.00 am
D. 10.00 am

Answer: C

Explanation:

Suppose they will meet after T hours.
Distance = Speed x Time
Sum of distance travelled by them after T hours
6T + 4T = 20 km
T = 2 hours.
So they will meet at 7:00 AM + 2 hours = 9:00 AM

Question: 06

In how many minutes will Rohit cover a distance of 800 m, if he runs at speed of 10 km/hr?

A. 5 min 12 sec
B. 4 min 40 sec
C. 5 min
D. 4 min 48 sec

Answer: D

Explanation:

Rohit's speed = 10 Km/hr = (10 x 5/18) m/sec = 50/18 m/sec
Time taken to cover 800 m = (800 / (50/18)) sec
= (800 x 18/50) sec = 288 sec = 4 min 48 sec

Question: 07

A plane flies along the four sides of a square field at a speed of 200, 400, 600 and 800 km/hr. Then find the average speed of plane around the square field.

A. 394
B. 400
C. 414
D. 384

Answer: D

Explanation:

Let the side of the square field be x and the average speed of plane be y

$x/200 + x/400 + x/600 + x/800 = 4x/y$

$\Rightarrow 25x/2400 = 4x/y$

$\Rightarrow y = 384$

$\therefore$ Average speed is 384 km/hr

Question: 08

Laxman has to cover a distance of 6 km in 45 minutes . If he cover one half of the distance in 2/3rd time . what should be his speed to cover the remaining distance in the remaining time?

A. 8 km/hr
B. 12 km/hr
C. 3 km/hr
D. 16 km/hr

Answer: B

Explanation:

∵ Time left = (1/3 X 45/60) hr.

= 1/4 hr.

Distance left = 3km

∴ speed required = [3 / (1/4)] km/hr.

= 3 x 4

=12km/hr .

Question: 09

A person goes from one point to another point with a speed of 5 km/h and comes back to starting point with a speed of 3 km/h. Find the average speed for the whole journey.?

A. 3.75 km/h
B. 4.25 km/h
C. 4 km/hr
D. 3 km/hr

Answer: A

Explanation:

Average speed = 2AB/(A + B)
= 2 x 5 x 3/(5 + 3)
= 30/8
= 3.75 km/h

Question: 10

If a train runs at 5/6 of its original speed, then it reaches the station 10 min late. Then find out the usual time taken by train to cover the distance.

A. 40 min
B. 50 min
C. 45 min
D. 15 min

Answer: B

Explanation:

Let the actual speed of train be x and actual time taken be y
Then new speed of train = 5x/6
Therefore, new time taken = 6y/5 (as distance is same in both case)
Given, 6y/5 - y = 1/6 hr , therefore actual time = 50 min

Question: 11

Ashutosh can cover a certain distance in 84 min by covering 2/3rd of distance at 4 km/h and the rest at 5 km/h. Find the total distance.

A. 5 km
B. 5.5 km
C. 6 km
D. 7 km

Answer: C

Explanation:

Let the total distance = L

Then, according to the question,

(2L/3)/ 4 + (1 - 2/3)L/5 = 84/60

⇒ 2L/12 + L/15 = 84/60

⇒ L/6 + L/15 = 84/60

⇒ 5L + 2L = 42

⇒ 7L = 42

∴ L = 42/7 = 6 km

Question: 12

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 left time?

A. 5 km
B. 10 km
C. 15 km
D. 18 km

Answer: B

Explanation:

Total distance to covered in 10 h = 80 km
But it covers 40 km in 3/5th of time, i.e., 40 km in 6 h.
∴ Required time = 10 - 6 = 4 h
And remaining distance = 40 km
Thus, required speed = 40/4 =10 km/h

Question: 13

A person can walk a certain distance and drive back in 6 h. He can also walk both ways in 10h. How much time will he take to drive both ways?

A. 2 hour
B. 2 hour 30 min
C. 5 hour 30 min
D. 4 hour

Answer: A

Explanation:

Given that, W + D = 6 ...(i)
[w = Time taken while walking and
D = Time taken while driving]
From Eq. (i)
5 +D = 6
⇒ D = 1
2D = 2 x 1 = 2
∴ He will take 2 h to drive both ways.

Question: 14

A takes 4 h more than the time taken by B to walk D km. If A doubles his speed, he can make it in 2 h less than that of B. How much time does B require for walking D km?

A. 4 hour
B. 6 hour
C. 8 hour
D. 9 hour

Answer: C

Explanation:

Let B takes x h to walk D km.
Then, A takes (x + 4) h to walk D km.
With double of the speed,
A will take (x+ 4)/2 h.
According to the question,
$x - (x + 4)/2 = 2$
$\Rightarrow 2x - (x + 4) = 4$
$\Rightarrow 2x - x - 4 = 4$
$\therefore x = 4 + 4 = 8$ h

Question: 15

If Sohail walks from his home to office at 16 km/h, he is late by 5 min. If he walks at 20 km/h, he reaches 10 min before the office time. Find the distance of his office from his house.

A. 17 km
B. 13 km
C. 20 km
D. 22 km

Answer: C

Explanation:

Let required distance = L

According to the question,

L/16 - L/20 = 15/20

⇒ (5L - 4L)/80 = 1/4

∴ L = (1/4) x 80 = 20 km

THANK YOU