



Speed Time & Distance Questions With Solution

1. Hemant covers a certain distance with his own speed, but when he reduces his speed by 10 km/hr his time duration for the journey increases by 40 hrs, while if he increases his speed by 5km/hr from his original speed he takes 10hrs less than the original time taken. Find the distance covered by him.
- A) 1200km
 - B) 1500km
 - C) 1350km
 - D) 1400km
 - E) None

View Answer

Option B

Solution:

Let distance be x km and speed be y km/hr

$$\frac{x}{y-10} - \frac{x}{y} = 40 \implies x = 4y(y-10) \quad \text{---(1)}$$

$$\frac{x}{y} - \frac{x}{y+5} = 10 \implies x = 2y(y+5) \quad \text{---(2)}$$

Equate 1 and 2

$$4y(y-10) = 2y(y+5)$$

$$2y-20 = y+5 \implies y = 25 \text{ km/hr}$$

$$\text{Then } x = 2 * 25(25+5) = 50 * 30 = 1500 \text{ km}$$

2. A train met with an accident 60km away from station A. It completed the remaining journey at 5/6th of the original speed and reached station B 1hr 12mins late. Had the accident taken place 60km further, it would have been only 1hr late. what was the original speed of the train?
- A) 50km/hr
 - B) 45km/hr
 - C) 60km/hr
 - D) 55km/hr
 - E) None

View Answer

Option C

Solution:

Let the original speed be $6x$.

Travelling 60km at 5/6th of original speed cost 12 mins etc.

$$\frac{60}{5x} = \frac{60}{6x} + \frac{12}{60}$$

$$\implies x = 10$$

Original speed $6x = 60$ km/hr.

3. Two men start together to walk a certain distance, one at 4 km/hr and another at 5 km/hr. The former arrives half an hour before the latter. Find the distance.

- A) 10km
- B) 15km
- C) 20km
- D) 8km
- E) None

View Answer

Option A

Solution:

If the distance be x km, then

$$x/4 - x/5 = 1/2$$

$$(5x - 4x)/20 = 1/2$$

$$x/20 = 1/2 \implies x = 10\text{km}$$

4. 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 km/hr and the time of flight increased by 30 minutes. The duration of the flight is:

- A) 2hrs
- B) 1hr 30min
- C) 2hrs 15min
- D) 1hr
- E) None

View Answer

Option D

Solution:

Let the duration of the flight be x hrs.

$$\text{Then, } 600/x - 600/(x + 1/2) = 200$$

$$600/x - 1200/2x + 1 = 200$$

$$X(2x + 1) = 3$$

$$2x^2 + x - 3 = 0$$

$$X = 1\text{hr.}$$

5. Two racers start running towards each other, one from A to B and another from B to A. They cross each other after one hour and the first racer reaches B, $5/6$ hour before the second racer reaches A. If the distance between A and B is 50 km. what is the speed of the slower racer?

- A) 15km/hr
- B) 20km/hr
- C) 25km/hr

- D) 30km/hr
- E) None

View Answer

Option B

Solution:

Let second racer takes x hr with speed s_2

First racer takes $x - 5/6$ hr with speed s_1

Total distance = 50km

$$S_1 = 50 / (x - (5/6))$$

$$S_2 = 50 / x$$

As they cross each other in 1hr...

Total speed = $s_1 + s_2$

Now, $T = D / S$

$$50 / (s_1 + s_2) = 1$$

$$x = 5/2, 1/3$$

Put $x = 5/2$ in $s_2 \rightarrow 20\text{km/hr}$

6. P and Q run at the speed 40m/s and 20m/s resp on the circular track of 800m, as its circumference, when would the P and Q meet for the first time at the starting point if they start simultaneously from the same point.
- A) 40sec
 - B) 50sec
 - C) 55sec
 - D) 60sec
 - E) None

View Answer

Option A

Solution:

Time taken by P to complete one round

$$800 / 40 = 20$$

Time taken by Q to complete one round

$$800 / 20 = 40$$

LCM of 20 40 = 40

Every 40sec they would be together at the starting point.

7. The speeds of Ram and Raj are 30 km/h and 40 km/h. Initially Raj is at a place L and Ram is at a place M. The distance between L and M is 650 km. Ram started his journey 3 hours earlier than Raj to meet each other. If they meet each other at a place P somewhere between L and M, then the distance between P and M is?
- A) 225km
 - B) 300km
 - C) 250km
 - D) 330km
 - E) None

View Answer

Option D

Solution:

If the 1st 3hr Ram covers 90km

So the rest $650-90=560$ km

Now they both travel together towards each other

So, the time is $560/70=8$ hr

Then ram travel total $3+8=11$ hrs

Thus the distance travelled by Ram $11*30=330$ km

8. The ratio between the speed of a car and a bike is 16 : 15 respectively. Also, a bus covered a distance of 480 km in 8 hrs. The speed of the bus is three-fourth the speed of the car. How much distance will the bike cover in 6 h?

- A) 320km
- B) 360km
- C) 450km
- D) 435km
- E) None

View Answer

Option C

Solution:

Speed of bus = $480/8 = 60$ km/ h

Speed of car = $(60*4)/3=80$ km / h

Speed of car : Speed of bike = 16 : 15

Speed of bike = $80/16 * 15 = 75$ km/ h

Distance covered by bike in 6 hr = $75 \times 6 = 450$ km

9. How many seconds will a train 50 m in length, travelling at the rate of 42 km an hour, rate to pass another train 80 m long, proceeding in the same direction at the rate of 30 km an hour?

- A) 45sec
- B) 39sec
- C) 50sec
- D) 55sec
- E) None

View Answer

Option B

Solution:

Relative speed = $42-30=12$ km/hr

Time = $(50+80)*18/12*5$

= $130*18/12*5 \implies 13*3$

= 39sec.

10. A man rides his bike 20 km at an average speed of 8 km/hr and again travels 45 km at an average speed of 10 km/hr. What is his average speed for the ride approximately?

- A) 10.8km/hr
- B) 8.5km/hr
- C) 9.3km/hr
- D) 10.2km/hr
- E) None

View Answer

Option C

Solution:

Average speed=total distance/total time

Total time= $20/8 + 45/10$

Avg speed= $(20+45)/(20/8 + 45/10)$

= $65/((200+360)/80)$

= $65*80/560 = 65/7$

=9.3km/hr

1. Two buses start at same time from Chennai and Bangalore, which are 250km apart. If the two buses travel towards each other, they meet after 1hr and if they travel in same direction they meet after 5hrs. What is the speed of the bus starts from Chennai if it is know that the one which started from Chennai has more speed than the other one?

- A) 150km/hr
- B) 100km/hr
- C) 45km/hr
- D) 80km/hr
- E) 120km/hr

View Answer

Option A

Solution:

$S=D/T$

Here we have two speeds. We get 2 equations as.

$250/1hr = C+B$ —1 (Travelling in opposite direction, speed must be added ie C+B)

$250/5hr = C-B$ —2 (Travelling in same direction, speed to be subtracted. ie C-B)

solving 2 eqn $C=150km/hr$.

2. Car A leaves the city at 5pmm and is driven at a speed of 30km/hr. 3hrs later another car B leaves the city in the same direction as car A. In how much time will car B be 12kms ahead of car A if the speed of car B is 50km/hr?

- A) 5hrs
- B) 4.2hrs
- C) 8hrs

- D) 5.1hrs
E) 12hrs

View Answer

Option D

Solution:

Car A travels 3hrs. $3 \times 30 = 90\text{km}$

Difference between speeds $50 - 30 = 20\text{km/hr}$

Distance ahead 12km . $90 + 12 = 102\text{km}$

$T = D/S \implies 102/20 = 5.1\text{hrs}$.

3. Two train starts at the same time from Delhi and Agra and proceed towards each other at the rate of 40km/hr and $37 \frac{1}{2}\text{km/hr}$. When they meet it is found that one train has traveled 200km more than the other train. What is the distance between Delhi and Agra?

- A) 6200km
B) 5000km
C) 4200km
D) 4800km
E) 6000km

View Answer

Option A

Solution:

Speed ratio $40:37 \frac{1}{2} \implies 40:75/2 \implies 80:75$ ie $16:15$

ratio diff between speed is $1[16-15]$

$1 \implies 200$ (more distance)

$[16+15]31 \implies ?$

$31 \times 200 = 6200\text{km}$.

4. If a car runs at 45km/hr , it reaches its destination late by 10 min but if runs at 60km/hr it is late by 4min . What is the correct time for the journey?

- A) 24min
B) 14min
C) 32min
D) 20min
E) 46min

View Answer

Option B

Solution:

Distance = diff in time $\times (S_1 \times S_2) / (S_1 - S_2)$

$D = [10 - 4] / 60\text{hr} \times (45 \times 60) / [60 - 45] = 6/60 \times 45 \times 60 / 15 \implies 18\text{km}$

time $T = D/S$ (take any one of the speed) $18/45 = 2/5\text{hrs} = 2/5 \times 60 = 24\text{min}$

then correct time is $24 - 10 = 14\text{mins}$.

5. A bike rider starts at 40km/hr and he increases his speed in every 1 hour by 2km/hr. Then the maximum distance covered by him in 24 hrs is:

- A) 682km
- B) 540km
- C) 620km
- D) 612km
- E) 500km

View Answer

Option D

Solution:

Speed of the rider: 40km/hr

He increases his speed in every 1 hr by 2km/hr.

Distance covered by every 1 hr will be 40,42,44....upto 12terms. i.e. (for 24hrs)

Sum of 1st n terms= $n/2 (2a+(n-1)d)$

$$12/2 * (2*40+11*2) ==> 12/2 * (80+22) ==> 612\text{km}$$

6. Two friends Ram and Ravi are travelling from point A to B, which are 600km apart. Travelling at a certain speed Ram takes 1hr more than Ravi to reach point B. If Ram doubles his speed he will take 1hr 30mins less than ravi to reach point B. At what speed was Ram driving from point A to B?

- A) 150km/hr
- B) 120km/hr
- C) 80km/hr
- D) 45km/hr
- E) 92km/hr

View Answer

Option B

Solution:

$T = D/S$. Let x be the speed

$$600/x = T+1, 600/2x = T - 3/2$$

Equate T

$$(600-x)/x = (600+3x)/2x$$

$$1200-12x = 600+3x ==> x=120\text{km.}$$

7. A man takes 4hrs 30min in walking to a certain place and riding back. He would have gained 2hrs by riding both ways. The time he would take to walk both ways, is:

- A) 5hrs10min
- B) 4hrs30min
- C) 7hrs
- D) 5hrs40min
- E) 4hrs

View Answer

Option C

Solution:

$W+R = 4\text{hrs } 30\text{min ie } 9/2\text{hrs}$
 $R+R=2\text{hrs} \implies R=1\text{hr}$
then $2W=9/2-1=7/2$, $W=7/2*2=7\text{hrs}$

8. Two trains of equal lengths take 10 seconds and 15 seconds respectively to cross a telegraph post. If the length of each train be 300 metres, in what time will they cross each other travelling in opposite direction?
- A) 25 sec
 - B) 18 sec
 - C) 14 sec
 - D) 12 sec
 - E) 20 sec

View Answer

Option D

Solution:

Speed of the first train = $[300/10]$ m/sec = 30 m/sec.

Speed of the second train = $[300/15]$ m/sec = 20 m/sec.

speed = $(30 + 20)$ m/sec = 50m/sec.

Required time = $(300+300)/50\text{secc} = 12 \text{ sec.}$

9. The driver of a car sees a school van 60m ahead of him. After 30seconds the school van is 60m behind. If the speed of the car is 45kmph, what is the speed of the School Van?
- A) 31.8kmph
 - B) 20.2kmph
 - C) 18.6kmph
 - D) 26.4kmph
 - E) 30.6kmph

View Answer

Option E

Solution:

Relative speed = $(60+60)/30 = 4\text{m/s} = 4 * 18/5 = 14.4\text{kmph}$

Speed of the school van = $45 - 14.4 = 30.6\text{kmph}$

10. The distance between two cities A and B is 330km. A train starts from A at 8 AM. and travels towards B at 60 km/hr. Another train starts from B at 9 AM. and travels towards A at 75 km/hr. At what time do they meet?
- A) 10 AM.
 - B) 10 : 20 AM.
 - C) 11 : 45 AM.
 - D) 11 : 15 AM.
 - E) 11 AM

View Answer

Option E**Solution:**

Distance travelled by first train in one hour
 $= 60 \times 1 = 60 \text{ km}$

Therefore, distance between two train at 9 AM.
 $= 330 - 60 = 270 \text{ km}$

Now, Relative speed of two trains $= 60 + 75 = 135 \text{ km/hr}$

Time of meeting of two trains $= 270/135 = 2 \text{ hrs.}$

Therefore, both the trains will meet at $9 + 2 = 11 \text{ AM.}$

1. A man in a train he can count 31 telephone posts in one minute. If they are known to be 45 m apart. Find the speed of the train.
- A) 90 km/hr
 - B) 70 km/hr
 - C) 100 km/hr
 - D) 81 km/hr
 - E) 95 km/hr

View Answer**Option D****Solution:**

speed of the train $= 30 \times 45 = (1350 \times 60)/1000 = 81 \text{ km/hr}$

2. If a man walks from his house to office at 6 km/hr , he is late by half an hour. However, if he walks at 8 km/hr , he is late by 10 minutes only. What is the distance of his office from his house.
- A) 8 km
 - B) 12 km
 - C) 14 km
 - D) 18 km
 - E) 10 km

View Answer**Option A****Solution:**

$(x/6) - (x/8) = (30-10)/60$
 $\Rightarrow x = 8 \text{ km}$

3. A candle of 8 cm long burns at the rate of 7 cm in 7 hour and another candle of 10cm long burns at the rate of 6 cm in 3 hour. What is the time required by each candle to remain of equal lengths after burning for some hours, when they start to burn simultaneously with uniform rate of burning?
- A) 5 cm
 - B) 3 cm
 - C) 1 cm
 - D) 2 cm
 - E) 4 cm

View Answer**Option D****Solution:**

$$(8 - x) = (10 - 2x)$$

$$\Rightarrow x = 2 \text{ cm}$$

4. Two trains, 190 m and 170 m long are going in the same direction. The faster train takes one minute to pass the other completely. If they are moving in opposite directions, they pass each other completely in 3 seconds. Find the speed of each train.

- A) 55 m/sec. and 42 m/sec.
- B) 63 m/sec. and 57 m/sec.
- C) 60 m/sec. and 55 m/sec.
- D) 42 m/sec. and 40 m/sec.
- E) 44 m/sec. and 40 m/sec.

View Answer

Option B

Solution:

let the speed of the faster train be x and the speed of the slower train be y . Then, When they move in the same direction, the relative speed = $(x - y)$

$$\text{Total distance} = 190 + 170 = 360 \text{ m}$$

$$\text{Now, dist.} = \text{speed} * \text{time} = 360 = (x - y) * 60$$

$$\Rightarrow (x - y) = 6 \text{ —————(1)}$$

When the trains move in opposite direction = $(x + y)$

$$360 = (x + y) * 3$$

$$\Rightarrow 120 = (x + y) \text{ —————(2)}$$

On solving (1) and (2), we get

$$x = 63 \text{ m/sec. and } y = 57 \text{ m/sec.}$$

5. A motorcyclist covered $(2/3)$ rd of a total journey at his usual speed. He covered the remaining distance at $(3/4)$ th of his usual speed. As a result, he arrived 30 minutes later than the time he would have taken at usual speed. If the total journey was 180 km. What was his usual speed?

- A) 30 km/hr.
- B) 20 km/hr.
- C) 50 km/hr.
- D) 40 km/hr.
- E) 60 km/hr.

View Answer

Option D

Solution:

Let the usual speed be x km/hr.

$$(1/3)\text{rd of the journey} = 180/3 = 60 \text{ km}$$

$$\text{Therefore, } 60 / (3x/4) - 60/x = (1/2)$$

$$\Rightarrow x = 40 \text{ km/hr.}$$

6. A boat running at the speed of 30 km/hr downstream covers a distance of 5 km in 10 minutes. The same boat while running upstream at the same speed covers the same distance in 12 minutes. What is the speed of the current?

- A) 2.5 km/hr
- B) 4 km/hr
- C) 3.2 km/hr
- D) 1.5 km/hr
- E) 2.5 km/hr

View Answer

Option A

Solution:

$$x + y = (5 * 60)/10 = 30 \text{ ——(1)}$$
$$\text{and } x - y = (5 * 60)/12 = 25 \text{ ——(2)}$$

From (1) and (2), we get

$$x + y - x + y = 30 - 25 = 5$$
$$\Rightarrow y = 2.5 \text{ km/hr.}$$

7. Two points P and Q are separated from a distance of 200 km. A car leaves from P to Q at the same time another car leaves from Q to P. The two car meet at the end of 8 hours. If the car travelling from P to Q travels 20km/hr. than the other. Find the speed of the faster car?

- A) 15.25
- B) 20.22
- C) 22.5
- D) 18.9
- E) 21.5

View Answer

Option C

Solution:

Let the speed of the car be x km/hr and (x+20) km/hr.

$$8x + 8(x+20) = 200$$
$$x = 2.5$$

speed of the faster carr =22.5 km/hr.

8. A person takes 10 hours in walking to a place and riding back. He would have taken 5 hours less by riding both ways. What would be the time he would take to walk both ways?

- A) 5 hours
- B) 15 hours
- C) 12 hours
- D) 10 hours
- E) 8 hours

View Answer

Option B

Solution:

Time taken in walking one way and riding other way = 10 hours

Time taken in riding both the ways = 5 hours

Time taken in walking one way * 2 = 20 hours – 5 hours = 15 hours

9. A man ride a bike at a speed of 6 km/hr from point X to point Y and came back from point Y to point X at the speed of 8 km/hr. What is the ratio between the time taken by man in riding from X to Y to point Y to X respectively?

- A) 3 : 5
- B) 4 : 3
- C) 1 : 5
- D) 2 : 3
- E) 2 : 7

View Answer

Option B

Solution:

Required ratio = 8 : 6 = 4 : 3

10. Ritesh drive a car at the speed of 60 km/hr from resort A to resort B. Returning over the same route , he got stuck in traffic and took an hour longer, also he could drive only at the speed of 40 km/hr . How many kilometers did he drive each way?

- A) 122 km
- B) 100 km
- C) 120km
- D) 100 km
- E) 110 km

View Answer

Option C

Solution:

$x/40 - x/60 = 1$
 $\Rightarrow 20x/2400 = 1$
 $\Rightarrow x = 120 \text{ km}$

1. The speed of a boat in still water is 8kmph and the speed of current is 5kmph . The boat starts from point P and rows to point Q and comes back to point P. It takes 16 hours during this journey .Find the distance between the P and Q .

- A) 42km
- B) 28km
- C) 31km
- D) 39km
- E) 47km

View Answer

Option D

Solution:

Between point P and Q = $x/(8-5) + x/(8+5) = 16$
 $\Rightarrow x = 39\text{km}$

2. To reach from point A to point B at 4pm , Anuja will have to travel at an average speed of 18kmph . She will reach the point B at 3pm if she travels at an average speed of 24kmph . What will be the average speed of Anuja to reach point B at 2pm ?

- A) 55kmph
- B) 36kmph
- C) 45kmph
- D) 30kmph
- E) 28kmph

View Answer

Option B**Solution:**

From the ques. we get to know,

$$x/18 - x/24 = 1$$

$$\Rightarrow x = 72\text{km}$$

Time taken at 18kmph = $72/18 = 4$ hours

Therefore ,

speed to cover 72km in 2 hours = $72/2 = 36$ kmph

3. Minal and Dhiraj begin together writing out a novel containing 8190 line. Minal starts with the first line , writing at the rate of 200lines per hour , and Dhiraj starts with the last line , then writes 8189th line and so on , proceeding backward at the rate of 150 lines per hour. At what line will they meet?

- A) 5000
- B) 4150
- C) 4680
- D) 5780
- E) 5600

View Answer**Option C****Solution:**

Duration of time of their meet = $8190/(200+150) = 23.4$ hr.

Their line of meet = $200 * 23.4 = 4680$ line

4. A person starts by a car from Kollam to Trivandram and at the same time another person starts from Trivandram to Kollam by a car . After passing each other they complete their journey in 2 hours and (1/2)hour resp. At what rate does the second person drives the car if the first car runs at a speed of 40 kmph ?

- A) 80kmph
- B) 75kmph
- C) 90kmph
- D) 110kmph
- E) 60kmph

View Answer**Option A****Solution:**

Ratio of speeds = $\sqrt{(1/2)} : \sqrt{2}$

$$\Rightarrow S1 : S2 = 1 : 2$$

If 1 === 40

then, 2 === 80

Therefore , S2 = 80 kmph

5. Suppose the telegraph poles on a railway track are 30 m apart , how many poles will be passed by a train in 2 hours if the speed of the train is 90 km an hour ?

- A) 7540
- B) 8750
- C) 6000
- D) 5240
- E) 6250

View Answer

Option C

Solution:

Train travels the dist. = $90 * 2 = 180 \text{ km} = 180000\text{m}$

Therefore,

the no. of poles = $180000/30 = 6000$ poles

6. The speeds of Vijaya and Keshav are 30kmph and 40kmph . Initially, Keshav is at a point A and Vijaya is at a place B . The distance between A and B is 650 km . Vijaya started her journey 3 hours earlier than Keshav to meet each other . If they meet each other at a place C somewhere in between A and B , then find the distance between C and B.

- A) 450km
- B) 785km
- C) 527km
- D) 470km
- E) 330km

View Answer

Option E

Solution:

In the first 3 hours Vijaya covers 90km, so rest dist. = 560km

Now, Vijaya and Keshav travels together , towards each other.

Time = Dist./Speed = $560/70 = 8\text{hours}$

Thus ,Vijaya travels total = $3 + 8 = 11$ hours

Thus , the dist. traveled by Vijaya = $11 * 30 = 330\text{km}$

7. A small aeroplane can travel at 400kmph in still air . The wind is blowing at a constant speed of 40kmph . The total time for a journey against the wind is 120min. What will be the time in minutes for the return journey with the wind?

- A) 98.18min.
- B) 220min.
- C) 114min.
- D) 80min.

E) 194min.

View Answer

Option A

Solution:

$$400 - 40 = 360 \text{ kmph}$$

Let distance be x km

Take time in hours

$$\Rightarrow 120/60 = x/360$$

$$\Rightarrow x = 720 \text{ km}$$

Speed of aeroplane with the wind = 440 kmph

Therefore ,

$$\text{Time taken by aeroplane with the wind} = (720/440) * 60 = 98.18 \text{ min.}$$

8. There are 50 poles with a constant distance between each pole . A car takes 20 sec. to reach the 10th pole . How much more time will it take to reach the last pole ?

- A) 120.11 sec.
- B) 108.88 sec.
- C) 88.8 sec.
- D) 125.4 sec.
- E) 157.17 sec.

View Answer

Option C

Solution:

To reach the 10th pole, the car need to travel 9 poles

9 poles 20 seconds

1 pole (20/9) seconds

To reach the last (20th) pole, the car needs to travel 19 poles.

$$49 \text{ pole } 49 \times (20/9) \text{ seconds} = 108.88 \text{ sec.}$$

Therefore, 88.8 sec more time required to reach the last pole.

9. A bike travels without stoppages at the rate of 60kmph and it travels with stoppages at the rate of 52kmph. How many minutes does the bike stop?

- A) 11 mins.
- B) 10 mins.
- C) 5 mins.
- D) 8 mins.
- E) 15 mins.

View Answer

Option D**Solution:**

Due to stoppages, the bike can cover 8 km less per hour $60 - 52 = 8$

Time taken to cover 8 km $= (8/60) \times 60 = 8$ minutes

10. A cat is 50 of its own leaps behind a rat. The cat takes 5 leaps per minute to the rat's 4 leaps. If the cat and the rat cover 8m and 5m per leap resp., what distance will the cat have to run before it catches the rat?

- A) 800m
- B) 1100m
- C) 900m
- D) 600m
- E) 500m

View Answer**Option A****Solution:**

Speed of cat = 40m/min.

Speed of rat = 20m/min.

Relative speed = $40 - 20 = 20$ m/min.

Diff. in dist. = $50 * 8 = 400$ m

Time in catching the rat = $400/20 = 20$ min.

Dist. traveled in 20min. = $20 * 40 = 800$ m

1. Two trains are running with speed 40kmph and 60kmph in the same direction. A man in the slower train passes by the faster train in 36seconds. Find the length of faster train?

- A) 100mtr
- B) 150mtr
- C) 200mtr
- D) 250mtr
- E) 300mtr

View Answer**Option C****Solution:**

In the same direction speed ... $60 - 40 = 20$ kmph

$20 * \frac{5}{18} * 36 = 200$ mtr

2. After travelling two hours a train met with an accident due to this it stops for an hour. After this the train moves at $66\frac{2}{3}\%$ speed of its original speed and reaches to destination 3hour late. If the accident would occur at 200km ahead in the same line then the train reaches only 2.5hours late. Then find the distance of journey and the original speed of the train?

- A) 2400km, 600kmph
- B) 1800km, 300kmph
- C) 2400km, 400kmph

- D) 1800km,200kmph
E) 2000km,100kmph

View Answer

Option B

Solution:

Due to 200km it saves 5hrs.

For 3hrs it has to run $200 \times 2 \times 3 = 1200\text{km}$

$66\frac{2}{3}\% = \frac{2}{3}$

. after.....normal

speed 2 : 3

time 3 : 2

. $3-2=1$.

$1=2$ (train stops for 1 hr out 3hrs. so $3-1=2$)

$2=4$

$1200/4 = 300\text{kmph}$

so $2\text{hr} \times 300 = 600\text{km}$

Now total distance = $1200 + 600 = 1800\text{km}$

3. A man travels a distance in three equal parts. He covers first part at 20kmph, second part at 40kmph and third part at 120kmph. Find the distance if he covers total distance in 20hrs.
- A) 1400km
B) 1200km
C) 1440km
D) 1600km
E) 1500km

View Answer

Option C

Solution:

Distance = average speed * time

Average speed will be....72kmph

$72 \times 20 = 1440\text{km}$

4. A person who can walk down a hill at the rate of 6kmph and climb up the hill at rate of 4kmph. He ascends and comes down to his starting point in 5hrs. how far did he ascends ?
- A) 12km
B) 14km
C) 20km
D) 24km
E) 16km

View Answer

Option A

Solution:

First find average speed = $2 \times 6 \times 4 / (6+4)$

Time = 5hrs

distance = $48/10 \times 5 = 24$

one side distance = $24/2 = 12\text{km}$

5. A student walks from his house at a speed of $2\frac{1}{2}$ km per hour and reaches his school 6minutes late. The next day he increases his speed by 1kmph and reaches 6minutes before school time.

How far is the school from his home?

- A) $5/4$ km
- B) $9/4$ km
- C) $7/4$ km
- D) $11/4$ km
- E) $10/4$ km

View Answer

Option C

Solution:

$$S1 * S2 / \text{difference of speed} * ((\text{late} + \text{early}) / 60)$$

$$= (5/2 * 7/2) / 1 * 12 / 60 = 7/4 \text{ km}$$

6. In covering a distance of 60km Abhi takes 2hrs more than Sam. If Abhi triples his speed then he would take 2hrs less than Sam. Abhi speed in kmph is ?

- A) 10kmph
- B) 12kmph
- C) 15kmph
- D) 20kmph
- E) 14kmph

View Answer

Option A

Solution:

Abhi triples his speed

.	triple.....normal
speed	3.....1
time	1.....3
.	3 - 1 = 2
2=4hrs	
3=6hrs	
so Abhi cover 60km in 6hrs	
$60/6 = 10 \text{ kmph}$	

7. Two men start together to walk a certain distance, one at 5kmph and another at 4kmph. The former arrives an hour before the latter. Find the distance?

- A) 10km
- B) 15km
- C) 20km
- D) 25km
- E) 30km

View Answer

Option C

Solution:

.	speed	5.....4
.	time	4.....5
.		5 - 4 = 1
1=1		
5=5hrs		
distance = $4 * 5 = 20 \text{ km}$		

8. A man covers a distance in downstream at 18kmph. If the speed of stream is 2kmph then find his speed in upstream?

- A) 12kmph
- B) 14kmph
- C) 16kmph
- D) 18kmph
- E) 20kmph

View Answer

Option B

Solution:

$$18 - 2 - 2 = 14\text{kmph}$$

9. The distance between a thief and a policeman is 300m. the speed of thief is 12m/s and the speed of police is 15m/s. find the distance covered by police to catch the thief?

- A) 1000m
- B) 1200m
- C) 1500m
- D) 2000m
- E) 1300m

View Answer

Option C

Solution:

$$300 / (15 - 12) = 100\text{sec}$$
$$15 * 100 = 1500\text{m}$$

10. Two trains of same length pass each other in 36sec. if the speed of trains are 40kmph and 20kmph respectively, then find the length of train?

- A) 200 m
- B) 400 m
- C) 600 m
- D) 300 m
- E) 500 m

View Answer

Option D

Solution:

$$2x / (40 + 20) * 18/5 = 36$$
$$2x = 600$$
$$x = 300\text{m}$$

1. A man covers a distance in 10hrs and in three equal parts. The speed is 10kmph, 20kmph and 60kmph respectively. Find the distance?

- A) 240km
- B) 300km
- C) 150km
- D) 180km

View Answer

Option D**Solution:**

Distance = speed * time

Here we need average speed. So average speed will come 18kmph

Distance = $18 * 10 = 180\text{km}$

2. Two persons covers same distance at 42kmph and 48kmph respectively. They find that the slower one takes 30minutes more to cover the distance. Find the distance cover by them?

- A) 150km
- B) 168km
- C) 200km
- D) 224km

View Answer**Option B****Solution:**

Speed:

42 : 48

7 : 8

Time 8 : 7

. (+1)

1=30

8=240minutes = 4hrs

Distance = speed * time

= $42 * 4$

= 168km

3. Two persons goes from A to B at 12kmph and 8kmph. The faster one reach B first and come back. He meets slower one at a point R. find the distance between A & R if the distance between A to B is 20km?

- A) 12km
- B) 24km
- C) 16km
- D) 18km

View Answer**Option C****Solution:**

it is clear that both person covers double distance .

So $2 * 20 / (12 + 8) = 2\text{hrs}$

Slower one covers $8 * 2 = 16\text{km}$

In that time in which father one covers $12 * 2 = 24\text{km}$

So 16km is ans

4. Two trains are running on a parallel track in same direction. Train A comes from behind and overtake train B in 60seconds. One person in train A observes that he covers train B in 40seconds. If the speed of trains in the ratio of 3:1, then find the ratio of length of train A & B?

- A) 1:3
- B) 3:2
- C) 2:3
- D) 1:2

View Answer

Option D

Solution:

In this question speed doesn't matter because we know $\text{length} = \text{speed} \times \text{time}$. Speed remains same in both cases so it will cancel out.

Now length of A+B = 60 units

Length of B = 40 units

Length of A = 60-40 = 20 units

A : B

20 : 40

1 : 2

5. If a person cover a distance in $\frac{5}{7}$ th of his normal speed, then he will reach his destination 20 minutes late. Find the usual time taken by him on his normal speed?

A) 100min

B) 50min

C) 140min

D) 70min

View Answer

Option B

Solution:

Shortcut : multiply numerator by time/difference

Difference = 7-5 = 2

Time = 20

$5 \times \frac{20}{2} = 50$ min

6. A man cover a distance in t hrs, if he met with an accident after 20km and he then run at his $\frac{3}{5}$ th of his normal speed, so he reach his destination 40 minutes late. If he met with an accident at 30km then he reach only 30min late. Find his original speed?

A) 60kmph

B) 50kmph

C) 40kmph

D) 24kmph

View Answer

Option C

Solution:

After moving 10km more, man saves 10 minutes. For saving of 40 minutes he has to cover 40km.

Now speed: after accident before accident

.	3	5
Time	5	3

. (+2)

2=40minutes

1=20min

(Normal time) 3= 60min

So he covers 40km in 60min with normal speed = 40kmph

7. A thief steal a car at 1pm and run at a speed of 80kmph. The theft discovered at 2pm and police run behind him at a speed of 100kmph. Find at what time police will catch the thief?

A) 6pm

B) 7pm

- C) 8pm
- D) 5pm

View Answer

Option A

Solution:

The thief cover 80km in 1hr.

Time – $80/(100-80) = 4$ hrs.

So – $2pm+4 = 6pm$

8. A boat travels upstream from Q to P and downstream from P to Q in 3hrs. if the distance between P to Q is 4km and the speed of the stream is 1kmph, then what is the speed of the boat in still water?

- A) 4.5kmph
- B) 5.2kmph
- C) 2.5kmph
- D) 3kmph

View Answer

Option D

Solution:

Go with options

$4/(3+1) + 4/(3-1) = 3hr$

Only option D satisfy

9. A boat covers 12km upstream and 18km downstream in 3hrs. while it covers 36km up stream and 24km downstream in $6(1/2)$ hrs. find velocity of the stream?

- A) 1.5kmph
- B) 1kmph
- C) 2kmph
- D) 2.5kmph

View Answer

Option C

Solution:

$12/y + 18/x = 3$(1)

$36/y + 24/x = 13/2$(2)

By solving above equation we will get

X=12kmph, y = 8kmph

Speed of stream = $(12-8)/2 = 2$ kmph

10. Two person A & B with speed of 30kmph and 40kmph comes towards each other. When they meet it is find that faster one cover 30km more than slower one, find the distance cover by train?

- A) 210km
- B) 240km
- C) 280km
- D) 300km

View Answer

Option A

Solution:

Faster train cover 10km more in every hour. So for 30km the train has to run for 3hrs.

$$\begin{aligned} \text{Distance} &= (30+40) *3 \\ &= 210\text{km} \end{aligned}$$

1. There are two trains. The speed of trains are x and $2x$ respectively. Train A started at 8am and train B started at 9 AM and move towards each other. The distance between them is 600km. they met each other at 12 Noon. Find the value of x ?
- A) 120kmph
 - B) 60kmph
 - C) 180kmph
 - D) 90kmph
 - E) 45kmph

View Answer

Option B

Solution:

$$\begin{aligned} (600 - x)/(x+2x) &= 3 \\ 10x &= 600 \\ X &= 60 \end{aligned}$$

2. A train start from point A and move towards B. it met with an accident after 45km and covered remaining distance at $2/3$ rd of its speed and it late by 40 minutes. If the accident happened 15km after then train would be 30 minutes late. Find the distance?
- A) 90
 - B) 100
 - C) 105
 - D) 110
 - E) 120

View Answer

Option C

Solution:

$$\begin{aligned} \text{It saves 10min in 15 km} \\ \text{So far 40min it cover } 15*4 &= 60\text{km} \\ \text{So } 60 + 45 &= 105 \end{aligned}$$

3. A man covers a distance in three equal parts. He covers first part at 5kmph, 2nd part at 10kmph and 3rd part at 30kmph. Find his average speed?
- A) 10kmph
 - B) 9kmph
 - C) 8kmph
 - D) 15kmph
 - E) 12kmph

View Answer

Option A**Solution:**

Let X LCM of 5,10,30 =30

Time taken in three parts

$$30/5= 6\text{hr}(1)$$

$$30/10=3\text{hr}(2)$$

$$30/30= 1\text{hr}(3)$$

$$\begin{aligned}\text{Average speed} &= \text{total distance/ total time} \\ &= 30+30+30/6+3+1 = 10\text{kmph}\end{aligned}$$

4. There are two trains move towards each other @50kmph and 60kmph respectively. When they meet it is noted that faster train covers 50km more than the other. Find the total distance travelled by them?
- A) 555km
 - B) 500km
 - C) 575km
 - D) 550km
 - E) 525km

View Answer**Option D****Solution:**

Faster train cover 10km more in every hour so far 50km it has to run in 5hr.

$$\text{Distance} = (50+60) * 5 = 550\text{km}$$

5. Two person A & B walk from P to Q, which are at a distance of 15km at 6kmph and 9kmph respectively. B reaches Q and returns immediately and meets A at R. find the distance from P to R?
- A) 8km
 - B) 12km
 - C) 9km
 - D) 10km
 - E) 15km

View Answer**Option B****Solution:**

Total distance travelled by both = 30km

Ratio of speed = 2:3

$$\text{PR} = 2/2+3 * 30 = 12\text{km}$$

6. A man walking at a speed of 5kmph reaches his target 5minutes late. If he walks at a speed of 6kmph, he reaches on time. Find the distance of his target from his house?
- A) 2.3km
 - B) 2.4km
 - C) 2.5km
 - D) 2.6km
 - E) 2.7km

View Answer

Option C

Solution:

$$(5 \times \frac{6}{1}) \times (\frac{5}{60}) = 2.5 \text{ km}$$

7. A thief steal a car at 1:30PM and drive at the speed of 80kmph. The theft is discovered at 2:30pm and police run behind him at the speed of 100kmph. Find at what time thief will be caught?

- A) 6:30PM
- B) 5:30PM
- C) 6PM
- D) 7PM
- E) 7:30PM

View Answer

Option A

Solution:

Thief cover distance in 1hr=80km

Time taken by police to caught him = $\frac{80}{100-80} = 4 \text{ hrs}$

$$2:30 + 4 = 6:30 \text{ pm}$$

8. A train after travelling 50km met with an accident and then proceeds at 3/4th of its former speed and arrived at destination 35min late. Had the accident occurred 24km further, it would have reached the destination only 15min late. Find the normal speed of the train?

- A) 36kmph
- B) 40kmph
- C) 38kmph
- D) 24kmph
- E) 12kmph

View Answer

Option D

Solution:

$$20 \text{ min} = 24 \text{ km}$$

$$35 \text{ min} = 42 \text{ km}$$

Now ratio of speed – normalafter accident

$$4 \dots \dots \dots 3$$

Ratio of time – 3.....4

$$\cdot \dots \dots \dots (+1) = 35$$

$$\text{So } 3 = 105 \text{ min}$$

$$42/105 \times 60 = 24 \text{ kmph}$$

9. A train passed two persons who are walking in the opposite direction in which the train is moving at the rate of 6 meter per second (mps) and 10mps in 8 seconds and 6 seconds. Find the length of train?

- A) 96m

- B) 80m
- C) 72m
- D) 54m
- E) 60m

View Answer

Option A

Solution:

Let speed of train =X

$$\text{Length} = (X+6) * 8 = (X+10) * 6$$

$$2x = 12$$

$$X = 6$$

Relative speed * time = length

$$(6+6) * 8 = 96\text{m}$$

10. A train covers a platform in 30 sec and a pole in 10sec. if the length of train is 150m, then find the length of platform?
- A) 400m
 - B) 450m
 - C) 500m
 - D) 300m
 - E) 550m

View Answer

Option D

Solution:

Length of train : Length of platform

$$(x+150)/30 = 150/10$$

$$x=300$$

1. Two buses starts from A and B towards each other respectively. They meet at a point X. the speed of buses are 50km/hr and 60km/hr. when they met they found that faster train covers 40km more than the slower. Find the distance between A and B.
- A) 400km
 - B) 420km
 - C) 440km
 - D) 480km

View Answer

Option C

Solution:

The bus which is faster covers 10km more in an hour. So for 40km it has to take 4hrs.

Now the time both the train travelled in 4hrs.....

Distance = speed * time

$$(50+60)=110$$

$$110*4= 440$$

2. A bus covers a total distance in 12hours. It covers first half at 10km/hr and 2nd half at 14km/hr. find the distance covered by bus?

- A) 140km
- B) 120km
- C) 160km
- D) 145km

View Answer

Option A

Solution:

This is concept of average speed.

So

$$\begin{aligned} \text{Distance} &= \text{average speed} * \text{time} \\ &= 2*10*14/(10+14) *12 = 140\text{km}. \end{aligned}$$

3. A thief steal a car at 1:30pm and drive at a speed of 60km/hr. Police came to know about theft at 2:30pm and start chasing him with the speed of 70km/hr. after how much kilometer police will catch the thief ?

- A) 360km
- B) 420km
- C) 440km
- D) 480km

View Answer

Option B

Solution:

Police came to know about theft after 1hou. So distance between thief and police 60km, now police start chasing him with a relative speed of 10km/h (70-60)

$$\text{Time taken by police} = 60/10 = 6\text{hrs}$$

$$\text{Distance run by police} = 70*6= 420\text{km}$$

4. A train passes a pole in 30seconds and a platform in 1minute10seconds. If the length of platform is 160km. then find the length of train ?

- A) 100m
- B) 80m
- C) 160m
- D) 120m

View Answer

Option D

Solution:

Ratio of length of train : length of platform

30 : 40

40=160

30= 120km

5. If a bus run without stoppages then the speed of bus is 54km/h and with stoppage the speed reduces to 36km/hr. find the stoppage time in an hour of bus?

A) 20minutes

B) 15minutes

C) 10minutes

D) 25minutes

View Answer

Option A

Solution:

Sol: stoppage time = original speed – stoppage speed *60

Original speed

$= (54 - 36) / 54 * 60$

$= 20 \text{ minutes}$

6. A person has to reach a place in a certain time and he find that he will be 15minutes late, if he walks at 4km/h and 10 minutes earlier if he walks at 6km/h. find the distance he has to cover?

A) 3km

B) 4km

C) 5km

D) 6km

View Answer

Option C

Solution:

$s_1 * s_2 / (s_2 - s_1) * (t_1 + t_2) / 60$

$= 4 * 6 / 2 * 25 / 60$

$= 5 \text{ km}$

7. A man can reach a certain place in 30hours. If he reduces his speed by 1/15th, he covers 10km less in that time. Find his speed ?

A) 4km/h

B) 5km/h

C) 6km/h

D) 7km/h

View Answer

Option B

Solution:

Speed = A : B

. 15 : 14

$$\text{Time} = 14 \text{ } 15 \text{ (15-1)}$$

but we have to keep time same in B also, so distance covered in both cases =

$$A = 15 * 14 = 210$$

$$B = 14 * 14 = 196$$

$$210 - 196 = 14$$

$$14 = 10 \text{ (10 km less in question)}$$

$$210 = 150 \text{ km}$$

$$\text{Speed} = 150 / 30 = 5 \text{ km/h}$$

8. Ravi and Ajay start simultaneously from the same place. A far B 50km apart. Ravi's speed is 5km/h less than that of Ajay. Ajay after reaching B, returns and meet Ravi at a place 10km apart from B. find Ravi's speed?

- A) 10km/h
- B) 15km/h
- C) 12km/h
- D) 20km/h.

View Answer

Option A

Solution:

In the whole journey Ajay covers 20km more than Ravi .

Then time taken by Ajay = $20/5 = 4$ hrs (Because in every hour Ajay covers 5km more than Ravi for 20 km.)

So

$$\text{Speed of Ajay} = 60/4 = 15$$

$$\text{Ravi's speed} = 15 - 5 = 10 \text{ km/hr}$$

9. Walking at $4/5$ th of his usual speed, a man is 10 minutes late. The usual time taken by him to cover that distance is ?

- A) 36minutes
- B) 50minutes
- C) 45minutes
- D) 40minutes

View Answer

Option D

Solution:

In this case \rightarrow numerator * time / (Numerator - denominator)

$$= 4 * 10 / 1 = 40 \text{ minutes}$$

10. A man cover a certain distance in t hours. If he met with an accident at 50km and he cover remaining distance at $2/3$ of his speed. He covered distance in 30 minutes late. If he met with this accident at 60km he would late by 24 minutes , then find the distance?

- A) 100km
- B) 120km
- C) 110km
- D) 150km

View Answer

Option A

Solution:

He saves 6 minutes by covering 10 km more distance with his normal speed. For 30 minutes he covers 50 km and 50 km are initial

So distance = $50 + 50 = 100$ km.

1. A man covers a distance in four equal parts. He covers first part with speed of 60 kmph, second part with 80 kmph and third part and fourth part with 120 kmph and 80 kmph respectively. Find the average speed of his journey.
- A) 60 kmph
 - B) 80 kmph
 - C) 120 kmph
 - D) 100 kmph
 - E) None of these

View Answer

Option B

Solution:

|—x—|—x—|—x—|—x—|
60 80 120 80

Let $x = 240$ km (LCM of speed)

Time = $240/60 + 240/80 + 240/120 + 240/80 = 4 + 3 + 2 + 3 = 12$ hours

Avg speed = total distance / total time = $240 * 4 / 12 = 80$ kmph

2. A thief steals a car at 8 PM and starts driving at a speed of 80 kmph. The theft came into light at 9 PM and police started to chase him at 9 PM at a speed of 100 kmph. At what time will he be caught?
- A) 2 AM
 - B) 3 AM
 - C) 12 PM
 - D) 1 AM
 - E) None of these

View Answer

Option D

Solution:

Thief has moved 80 km in 1 hour, So distance = 80 km

Time = Distance / relative speed = $80 / (100 - 80) = 4$ hour

9 PM + 4 = 1 AM

3. A train starts from P at 8 PM and reaches Q at 11 PM. Another train starts from Q at 6 PM and reaches P at 11 PM. Find at what time they will meet each other?

- A) 9:7.5 PM
- B) 8:7.5 PM
- C) 10:7.5 PM
- D) 9:7.5 PM
- E) None of these

View Answer

Option A

Solution:

Time (A:B)=3:5 => Speed(A:B)=5:3

Let distance=150 km

Speed A= 50 kmph ; Speed B=30 kmph

B starts 6 PM, in 2 hours i.e (till 8 PM when A starts) it will move $2 \times 30 = 60$ km

remaining = $150 - 60 = 90$ km

Time= distance/relative speed = $90/80 = 1$ hour 7 mins 30 sec

hence time = 8 PM + 1 hour 7 mins 30 sec = 9:7.5 PM

4. If a person goes to school from his home at a speed of 4 kmph, he reaches 10 minutes late. If he goes at a speed of 6 kmph he reaches 10 mins early. Find the distance between school and home

- A) 5 km
- B) 8 km
- C) 6 km
- D) 4 km
- E) None of these

View Answer

Option D

Solution:

Direct Formula Distance = $[\text{Speed 1} \times \text{Speed 2} / (S1 - S2)] \times [(\text{Late} + \text{Early}) / 60]$

$= 4 \times 6 / (6 - 4) \times [(10 + 10) / 60] = 4$ km

5. A man takes 7 hours 30 mins in walking to a certain distance and riding back. He would have gained 3 hours 10 mins by riding both ways. How long he would take to walk both ways?

- A) 600 mins
- B) 640 mins
- C) 680 mins
- D) 580 mins
- E) None of these

View Answer

Option B

Solution:

7 hour 30 mins – 3 hours 10 mins = 4 hours 20 mins (When riding both ways)

=> 2 hour 10 mins riding in one way

ride+walk= 7 hour 30 min —(i)
ride= 2 hour 10 min —(ii)
Diff (i)-(ii)=walk one way=5 hour 20 min
walk 2 way= 10 hour 40 mins=640 mins

6. In covering a distance the speed of A and B are in the ratio 4:5. A takes 40 mins more than B to reach the destination. The time taken by A to reach the destination is?

- A) $2\frac{1}{3}$ hours
- B) $4\frac{1}{3}$ hours
- C) $3\frac{1}{3}$ hours
- D) $5\frac{1}{3}$ hours
- E) None of these

View Answer

Option C

Solution:

Speed (A:B)=4:5

Time (A:B)=5:4

Time diff=5-4=1

1=40 min

5=200 mins= $3\frac{1}{3}$ hours

7. Two person cover some distance at a speed of 35 kmph and 40 kmph respectively. Find the distance if one person takes 15 minute more than the other.

- A) 60 km
- B) 50 km
- C) 80 km
- D) 70 km
- E) None of these

View Answer

Option D

Solution:

Speed (A:B)=35:40=7:8

Time(A:B)=8:7 ->Diff=1

1=15

8=120 min=2 hour

Distance=35*2= 70 km

8. Two busses start at same time from two stations and move towards each other at the rate of 30 kmph and 35 kmph respectively. When they meet one bus has traveled 60 km more than the other. Find the distance between the two bus stations.

- A) 780 km
- B) 720 km
- C) 680 km
- D) 750 km

E) None of these

View Answer

Option A

Solution:

The bus with higher speed moves $35-30=5$ km more than the other in 1 hour means it will move 60 more in $60/5=12$ hours
Hence distance= $30*12+35*12=780$ km

9. A train crosses a pole in 20 seconds and a platform in 45 seconds. If the length of platform is 500 meters find the sum of length of train and platform

- A) 800 m
- B) 900 m
- C) 1000 m
- D) 950 m
- E) None of these

View Answer

Option B

Solution:

Train : Platform= 20 : 25
 $25=500$
 $20=400$
total length= 900 m

10. A train overtakes two persons who are walking in the same direction in which the train is moving, at the rate of 2 kmph and 4 kmph respectively and passes them completely in 9 seconds and 10 seconds respectively. Find the length of the train.

- A) 50 m
- B) 40 m
- C) 60 m
- D) 70 m
- E) None of these

View Answer

Option A

Solution:

$$x/(y-2)*18/5=10 \text{ ---(i)}$$

$$x/(y-4)*18/5=9 \text{ ---(ii)}$$

solve and get $x=50$ m

•

The distance between two towns A and B is 545 km. A train starts from town A at 8 A.M. and travels towards town B at 80 km/hr. Another train starts from town B at 9 : 30 A.M. and travels towards town A at 90 km/hr. At what time will they meet each other?

- A) 11:30 AM

- B) 12:30 PM
- C) 12:00 Noon
- D) 1:00 PM
- E) 11:00 AM

View Answer

Option C

Solution:

With 80 km/hr, distance travelled in 1 n half hours (9:30AM – 8AM) is $3/2 * 80 = 120$ Km

Now second train also starts, and at this time distance between both trains is $(545-120) = 425$ km

Relative speed = $80+90 = 170$ km/hr (when travelling in opposite direction, add speed)

So time when they meet = $425/170 = 2.5$ hrs

So after 9:30 AM they meet after 2.5 hrs, so 12 AM

- A bus can travel 560 km in 8 hours. The ratio of speed to train to that of car is 13 : 8. If the speed of bus is $7/8$ of the speed of car, find in how much time train can cover 520 km distance.

- A) 3 hours
- B) 4 hours
- C) 6 hours
- D) 5 hours
- E) 2 hours

View Answer

Option B

Solution:

Speed of bus = $560/8 = 70$ km/hr

So speed of car = $8/7 * 70 = 80$ km/hr

So speed of train = 130 km/hr

So time taken by train to cover 520 km = $520/130 = 4$ hours

- A person has to travel from point A to point B in car in a scheduled time at uniform speed. Due to some problem in car engine, the speed of car has to be decreased by $1/5^{\text{th}}$ of the original speed after covering 30 km. With this speed he reaches point B 45 minutes late than the scheduled time. Had the engine be malfunctioned after 48 km, he would have reached late by only 36 minutes. Find the distance between points A and B.

- A) 120 km
- B) 80 km
- C) 100 km
- D) 150 km
- E) 70 km

View Answer

Option A

Solution:

Let total distance be d km, speed = u, and time = t hours

So case 1:

30 km with speed u, (d-30) with speed $1 - 1/5 = 4/5$ of u

If he would have travelled (d-30) by speed u, then time = $(d-30)/u$

But now time is $= (d-30)/(4u/5) = 5(d-30)/4u$
And difference in timings is 45 minutes $= 3/4$ hour
So $5(d-30)/4u - (d-30)/u = 3/4$
Solve $(d-30)/u = 3$

case 2:

48 km with speed u , $(d-48)$ with speed $1 - 1/5 = 4/5$ of u
If he would have travelled $(d-48)$ by speed u , then time $= (d-48)/u$
But now time is $= (d-48)/(4u/5) = 5(d-48)/4u$
And difference in timings is 36 minutes $= 3/5$ hour
So $5(d-48)/4u - (d-48)/u = 3/5$
Solve $(d-48)/4u = 3/5$
Divide both equations, $d = 120$ km

• Towns A and B are 225 km apart. Two cars P and Q travel from towards each other from towns A and B respectively and meet after 3 hours. If the speed of P be $1/2$ of its original speed and Q be $2/3$ of its original speed, they would have met after 5 hours. Find the speed of the faster car.

- A) 50 km/hr
- B) 40 km/hr
- C) 45 km/hr
- D) 30 km/hr
- E) 60 km/hr

View Answer

Option C

Solution:

Let speeds be x km/hr and y km/hr
So $225/(x+y) = 3$
And $225/(x/2 + 2y/3) = 5$
Solve, $x = 30$, $y = 45$

• From point A, Priya and Bhavna start cycling towards point B which is 60 km away from A. The speed of Priya is 10 km/hr more than the speed of Bhavna. After reaching point B, Priya returns towards point A and meets Bhavna 12 km away from point B. Find the speed of Bhavna.

- A) 40 km/hr
- B) 15 km/hr
- C) 30 km/hr
- D) 20 km/hr
- E) 45 km/hr

View Answer

Option D

Solution:

Speed of Bhavna $= x$ km/hr, of priya $= (x+10)$ km/hr
Distance covered by Priya $= 60+12 = 72$ km
And by Bhavna $= 60-12 = 48$ km
So
 $72/(x+10) = 48/x$
Solve, $x = 20$

- A train crosses 2 men running in the same direction at speeds 5 km/hr and 8 km/hr in 12 seconds and 15 seconds respectively. Find the speed of the train.
 A) 30 km/hr
 B) 24 km/hr
 C) 25 km/hr
 D) 35 km/hr
 E) 20 km/hr

View Answer

Option E

Solution:

Let the speed of the train is s km/hr and its length is a m.

So

$a/[(s-5)*(5/18)] = 12$; [In same direction relative speed is obtained by subtracting. Also changing km/hr to m/s]

Solve $3a = 10s - 50$ (i)

And also

$a/[(s-8)*(5/18)] = 15$;

$6a = 25s - 200$ (ii)

Solve (i) and (ii)

$s = 20$ km/hr

- A train which is travelling at 80 km/hr meets another train travelling in same direction and then leaves it 150 m behind in next 20 seconds. Find the speed of the second train.
 A) 72 km/hr
 B) 53 km/hr
 C) 64 km/hr
 D) 59 km/hr
 E) 65 km/hr

View Answer

Option B

Solution:

Let speed of the 2nd train is s m/sec.

80 km/hr = $(80*5)/18 = 200/9$ m/sec.

Trains are travelling in same direction. So

$(200/9) - s = 150/20$

Solve, $s = 265/18$ m/sec = $265/18 * 18/5 = 53$ km/hr

- In a 500 m race C can beat B by 30 m, and in a 400 m race B can beat C by 20 m. Then in 200 m race A will beat C by how much distance (in m)?
 A) 58.2 m
 B) 68.4 m
 C) 63.5 m
 D) 72.8 m
 E) 55.2 m

View Answer

Option B**Solution:**

When A runs 500 m, B runs 470 m

So when A runs 200 m, B runs $470/500 * 200 = 188$ m

When B runs 400 m, C runs 280 m

So when B runs 188 m, C runs, $280/400 * 188 = 131.6$ m

So A will beat C by $(200-131.6) = 68.4$ m

- 2 towns A and B are 300 km apart. 2 trains start travelling from town A towards town B such that the second train leaves 8 hours late than the first one. They both arrive at town B simultaneously. If the speed of the faster train is 10 km/hr more than the speed of the slower train, find the time taken by the slower train to complete the journey.

A) 25 hours

B) 22 hours

C) 14 hours

D) 18 hours

E) Cannot be determined

View Answer**Option E****Solution:**

Let speed of the slower train is x km/hr, then speed of faster is $(x+10)$ kmph.

Let faster train takes t hours to cover the distance 300 km, then slower one takes $(t+8)$ hours.

Distance is same. So

$$x/(x+10) = t/(t+8)$$

Solve, $4x = 5t$

- A man leaves from point A at 4 AM and reaches point B at 6 AM. Another man leaves from point B at 5 AM and reaches point A at 8 AM. Find the time when they meet.

A) 6:20 AM

B) 6:15 AM

C) 5:45 AM

D) 5:36 AM

E) 5:30 AM

View Answer**Option D****Solution:**

Use formula:

$$4 \text{ AM} + (6-4)*(8-4)/[(6-4)+(8-5)]$$

gives $4 \text{ AM} + 8/5$

$$8/5 \text{ hours} = 1 \frac{3}{5} \text{ hours} = 1 \frac{3}{5} * 60 = 1 \text{ hour } 36 \text{ minutes}$$

So $4 \text{ AM} + 1 \text{ hour } 36 \text{ minutes} = 5:36 \text{ AM}$