PUZZLES

Q.1. A man travels from his home to office at 4km/hr and reaches his office 20 min late. If the Speed had been 6 km/hr he would have reached 10 min early. Find the distance from his home to office.

1. 8 km

2. 12 km

3. 6 km

4. 9 km

Answer (3) 6 km

Solutions:

Let the Distance between home and office =d. Suppose he reaches the office on Time, the Time taken = x minutes

Case 1: When he reaches office 20 minutes late,

Time taken = x+20

Case 2: when he reaches office 10 minutes early,

Time taken = x-10 As the Distance travelled is the same, the ratio of Speed in case 1 to the Speed in case 2 will be the inverse of the Time taken in both cases Ratio of Speed in both cases = 4:6 = 2:3 Ratio of Time in both cases = 3:2 Therefore (x+20)/(x-10)=3/2 2x+40 = 3x -30 x= 70 minutes Taking case 1, 4= d/(90/60)=> d= 360/60 = 6 km.

Q.2. Ram can row a boat in still water at 10 kmph. He decides to go boating in a river. To row upstream he takes 2 hours and to row downstream he takes 1 ½ hours. Find the Speed of the river.

1. 10/7 kmph

2. 11/5 kmph

3. 9/7 kmph

4. 13/5 kmph

Answer (1) 10/7 kmph

Solutions:

Suppose the Speed of the river is 'y' kmph.

While rowing upstream he takes 2 hrs and while rowing downstream he takes 1 ½ hours.

As the Distance covered is constant the ratio of the net Speeds of the boat while going upstream and downstream will be the inverse of the ratio of the Time taken.

Ratio of Time taken (downstream: upstream) = 1.5/2 =3/4

So the ratio of Speed of boat (downstream: upstream) = 4/3

downstream: 10 + y Speed upstream : 10 − y

(10+y)/((10-y)) = 4/3

30+3y=40-4y. Thus, 7y=10 & Y=10/7

Speed of river = 10/7 kmph.

Q.3. Ram and Shyam are standing at two ends of a room with a width of 30 m. They start walking towards each other along the width of the room with a Speed of 2 m/s and 1 m/s, respectively. Find the total distance travelled by Ram when he meets Shyam for the third time.

1. 110 m

2. 112 m

3. 120 m

4. 100 m

Answer (4) 100 m

Solution:

When Ram meets Shyam for the third time, they together would have covered a Distance of 5d, i.e 5x30m = 150 m.

The ratio of Speed of Ram and Shyam = 2:1, so the total distance travelled by them will also be in the ratio 2:1 as the Time taken is constant.

So the Distance travelled by Ram will be 2/3 x 150= 100 m

Q.4. A man decided to cover a distance of 6 km in 84 minutes. He decided to cover two thirds of the distance at 4 km / hr and the remaining at some different speed. Find the speed after the two third distance has been covered.

1. 5 kmph

2. 7 kmph

3. 9 kmph

4. 3 kmph

Answer (1) 5 kmph

Solution:

We are given that two thirds of the 6 km was covered at 4 km / hr i.e. 4 km distance was covered at 4 km / hr. Time taken to cover 4 km = 4 km / 4 km / hr = 1 hr = 60 minutes

Time left = 84 − 60 = 24 minutes

Now, the man has to cover remaining 2 km in 24 minutes or 24 / 60 = 0.4 hours

Speed required for remaining 2 km = 2 km / 0.4 hr = 5 km / hr

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Q.5. While going to office, Ramesh travels at a speed of 30 kmph and on his way back, he travels at a speed of 45 kmph. What is his average speed of the whole journey?

1. 45 kmph

2. 36 kmph

3. 32 kmph

4. 42 kmph

Answer (2) 36 kmph

Solution:

When distance travelled is same, then average speed = 2ab / (a+b); (where a and b are two different speeds) therefore,

The Average Speed = Therefore, Average Speed = 2 x 45 x 30 / 45 + 30, solving this we get 36 kmph.