TSD Assignment 3 (Relative Speed)

Question1- A thief escapes from a prison at 2 pm and travels away at a speed of 30 kmph. The police realize the escape at 3:30 pm and start the chase then at a speed of 40 kmph. At what time will the police catch the thief? At what distance from the prison is the thief caught?

Question 2 - Navjivan Express from Ahmedabad to Chennai leaves Ahmedabad at 6:30 am and travels at 50 km per hour towards Baroda situated 100 kms away. At 7:00 am Howrah - Ahmedabad Express leaves Baroda towards Ahmedabad and travels at 40 kms per hour. At 7:30 Mr. Shah, the traffic controller at Baroda realises that both the trains are running on the same tack. How much time does he have to avert a head-on collision between the two trains?

1) 15 minutes 2) 20 minutes 3) 25 minutes 4) 30 minutes

Question3- A train X departs from station A at 11:00 am for station B, which is 180 km away. Another train Y departs from station B at 11:00 am for station A. Train X travels of an average speed of 70 kmph and does not stop anywhere until it reaches station B. Train Y travels at an average speed of 50 kmph, but has to stop for 15 minutes at station C, which is 60 kms away from station B enroute to station A. Ignoring the lengths of the trains, what is the distance, to the nearest km, from station A to the point where the trains cross each other?

a. 112 b. 118 c. 120 d. None of these

 Question4- A car is climbing up a hill at a speed of 90kmph. A rabbit, sitting at the top of the hill spots the car when it is 1170 km away, and start running down the hill towards the car at a speed of 140kmph. As soon as it meets the car, the rabbit turns back towards the top of the hill at a speed of 120kmph. The rabbit continues this to & from motion from the top of the hill towards the car and again back at the top of the hill till the car raches the top of the hill. Find the total distance covered by the rabbit.

Question5- Yash Chopra's office is 10 km from his home, which he covers in 2 hours,. One day, as he was on his way to office, he passed his friend's office who immediately pointed out that he had forgotten to wear his shoes. Yash Chopra therefore turned back, put on his shoes and set off the office. As the passed his friend's office, she again pointed out that now he had forgotten his glasses. Yash chopra again went back, collected his glasses and reached the office 3 hours late. What is the distance between his home and friend's office?

Question6-Tripti and Deepti walk back and forth between the town hall and the county station at respective speeds of 2 kmph and 3 kmph. They start simultaneously - Tripti from the town hall and Deepti from the county station .If they crosses each other for the first time 60 minutes from the start, at what distance from the county station will they cross each other from the fifth time?

Question7- Two trains 150 miles apart are traveling toward each other along the same track. The first train goes 60 miles per hour; the second train rushes along at 90 miles per hour. A fly is hovering just above the nose of the first train. It buzzes from the first train to the second train, turns around immediately, flies back to the first train, and turns around again. It goes on flying back and forth between the two trains until they collide. If the fly's speed is 120 miles per hour, how far will it travel? find the distance travelled by fly in the direction of 1st train and in the direction of 2nd train

Question8- Bandel Local runs at 40km/hr , Punjab mail start from a distance of 80 km at 60km/hr . A cow starts with punjab mail at 80km/hr and keeps of flying to and fro between bandel local and punjab mail till both the trains meet at bandel station . a) What is the distance travelled by the crow ? b) How much distance did the crow travelled in forward direction ?

Question9- A group of people are marching with a speed of 5 m/s. The distance between the first and last row is 100 m. A dog starts running from the last row and moves towards the first row, turns and comes back to the last row. If the dog has travelled 400 m, find the speed of dog .

Answer Keys

Ans1- 180 km, 8:00 PM

Ans 2- 20 minutes

Ans 3- 112

Ans4- 1680km.

Ans5- 3.75 km

Ans 6- 3 km

Ans7- 120 , 90 , 30

Ans 8- 64,56,8

Ans 9-5 * sqrt(2)