**LINEAR MOTION REVISION QUESTIONS**

1. Two towns P and Q are 400 km apart. A bus left P for Q. It stopped at Q for one hour and then started the return journey to P. One hour after the departure of the bus from P, a trailer also heading for Q left P. The trailer met the returning bus ¾ of the way from P to Q. They met t hours after the departure of the bus from P.

1. Express the average speed of the trailer in terms of t
2. Find the ration of the speed of the bus so that of the trailer.

2. The athletes in an 800 metres race take 104 seconds and 108 seconds respectively to complete the race. Assuming each athlete is running at a constant speed. Calculate the distance between them when the faster athlete is at the finishing line.

3. A and B are towns 360 km apart. An express bus departs form A at 8 am and maintains an average speed of 90 km/h between A and B. Another bus starts from B also at 8 am and moves towards A making four stops at four equally spaced points between B and A. Each stop is of duration 5 minutes and the average speed between any two spots is 60 km/h. Calculate distance between the two buses at 10 am.

4. Two towns A and B are 220 km apart. A bus left town A at 11. 00 am and traveled towards B at 60 km/h. At the same time, a matatu left town B for town A and traveled at 80 km/h. The matatu stopped for a total of 45 minutes on the way before meeting the bus. Calculate the distance covered by the bus before meeting the matatu.

5. The distance between towns M and N is 280 km. A car and a lorry travel from M to N. The average speed of the lorry is 20 km/h less than that of the car. The lorry takes 1h 10 min more than the car to travel from M and N.

1. If the speed of the lorry is x km/h, find x (5mks)
2. The lorry left town M at 8: 15 a.m. The car left town M and overtook the lorry at 12.15 p.m. Calculate the time the car left town M.

6. A bus left Mombasa and traveled towards Nairobi at an average speed of 60 km/hr. after 21/2 hours; a car left Mombasa and traveled along the same road at an average speed of 100 km/ hr. If the distance between Mombasa and Nairobi is 500 km, Determine

(a) (i) The distance of the bus from Nairobi when the car took off (2mks)

(ii) The distance the car traveled to catch up with the bus

(b) Immediately the car caught up with the bus

(c) The car stopped for 25 minutes. Find the new average speed at which the car traveled in order to reach Nairobi at the same time as the bus.

8. A passenger notices that she had forgotten her bag in a bus 12 minutes after the bus had left. To catch up with the bus she immediately took a taxi which traveled at 95 km/hr. The bus maintained an average speed of 75 km/ hr. determine

(a) The distance covered by the bus in 12 minutes

(b) The distance covered by the taxi to catch up with the bus