

Assignment - 1.

1) Under what conditions will the distance and displacement of a moving body have the same magnitude?

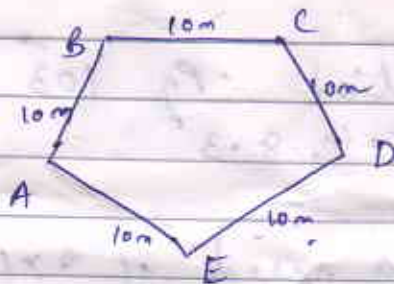
2) Name the device used to record
a) the distance travelled by a vehicle
b) the instantaneous speed of a vehicle

3) Which of the following are scalar quantities and which are vector quantities.

Distance, speed, velocity, displacement, mass, time, temperature, acceleration.

4) When do you say that a body is in uniform motion?

5) A child walks from A to E along the sides of a regular pentagon ABCDE of side 10m. Find the distance travelled by him and the magnitude of displacement.



6) A car travels at a speed of 40 km/h for 10 min, then at 55 km/h for 20 min, and finally at 20 km/h for 20 min. What is the average speed of the car?

7) Can a body be regarded in a state of rest as well as in motion? Explain with one example.

8) A train starting from a railway station and moving with uniform acceleration, attains a speed of 40 km/h in 10 min. Find its acceleration in m/s².

9) An athlete runs from one end to ^{the} other end of a semi-circular track whose radius is 70 m. What is the distance covered by the athlete and what is his displacement.

10) Find the initial velocity of a car which is stopped in 4 s by applying brakes. The retardation due to brakes is 5 m/s².
(Hint: here $a = -5 \text{ m/s}^2$.)

$$u = ?$$

$$v = 0$$

$$t = 4 \text{ s. Use } a = \frac{v - u}{t}$$

Ans. An ans

9) 11, 12, 13, 14.

NCERT text book questions Pg 103 - Q 2, 3 and example 8.4, 8.3

15) Light travels with a speed of $3 \times 10^8 \text{ m/s}$. How long does the light take to reach earth from the sun which is $1.5 \times 10^{11} \text{ m}$ away?

(Hint: use eqn speed = distance / time)