

Instructions to Students: The notes provided must be copied to the math's copy & then do the Homework in the same copy.

SPEED, TIME & DISTANCE

The distance travelled by a moving body in a unit of time is called its speed

$$\text{i) Speed} = \frac{\text{Distance}}{\text{Time}} \quad \text{ii) Distance} = \text{Speed} \times \text{Time}$$

$$\text{iii) Time} = \frac{\text{Distance}}{\text{Speed}}$$

$$\text{Speed in Km/Hr.} = \frac{\text{Distance in km}}{\text{Time in hours}}$$

$$\text{Speed in M/Sec} = \frac{\text{Distance in metres}}{\text{Time in seconds}}$$

Solved Examples

Example 1. A car is travelling at a speed of 70 km/ hr. How far will it travel in 48 minutes?

Solution : Speed = 70 km/ hr. time = $\frac{48}{60}$ hr. = $\frac{4}{5}$ hr.

$$\text{Distance covered} = \text{speed} \times \text{time}$$

$$= \left\{ 70 \times \frac{4}{5} \right\} \text{ km} = 56 \text{ km}$$

Hence, distance travelled by the car in 48 minutes is 56 km

Two Important Results

Rule 1: To convert a speed of km/hr. into m/sec, we multiply by $\frac{5}{18}$

Examples. i) $18 \text{ km/hr.} = \left\{ 18 \times \frac{5}{18} \right\} \text{ m/sec} = 5 \text{ m/sec}$

$$\text{ii) } 45 \text{ km/hr.} = \left\{ 45 \times \frac{5}{18} \right\} \text{ m/sec} = 12 \frac{1}{2} \text{ m/sec.}$$

Rule 2: To convert a speed of m/sec into km/hr. multiply by $\frac{18}{5}$

Examples. i) $30 \text{ m/sec} = \left\{ 30 \times \frac{18}{5} \right\} \text{ km/hr.} = 108 \text{ km/hr.}$

$$\text{ii) } 12 \text{ m/sec} = \left\{ 12 \times \frac{18}{5} \right\} \text{ km/hr.} = 43 \frac{1}{5} \text{ km/hr.}$$

Example 2. A car is running at a speed of 54 km/hr. How much time will it take to cover 600 metres.

Solution: we have.

$$54 \text{ km/hr.} = \left\{ 54 \times \frac{5}{18} \right\} \text{ m/sec} = 15 \text{ m/sec.}$$

Now, distance = 600m, speed = 15 m/sec

$$\text{Time taken in sec} = \frac{\text{Distance in metres}}{\text{Time in m/sec}}$$

$$\frac{600}{15} \text{ sec} = 40 \text{ sec}$$

Hence, the car will cover 600m in 40 sec.

Example3. A scooter is running at a speed of 45km/hr. How much distance will it cover in 18 seconds?

Solution: we have;

$$45 \text{ km/hr.} = \left\{ 45 \times \frac{5}{18} \right\} \text{ m/sec} = \frac{25}{2} \text{ m/sec}$$

$$\text{Speed} = \frac{25}{2} \text{ m/sec, time} = 18 \text{ seconds}$$

$$\text{Distance covered} = \text{speed} \times \text{time} = \left\{ \frac{25}{2} \times 18 \right\} \text{ m} = 225 \text{ m}$$

Hence, the scooter will cover 225m in 18 seconds

Home Work

Exercise 8.5 {Question No. 1, 2, & 3}



MATHS PRACTICAL

Points to remember .

**Read and understand the experiment.*

**In the Maths Practical Copy write down AIM, MATERIAL REQUIRED , METHODOLOGY , TABULAR COLUMN and CONCLUSION on the ruled page. DIAGRAM and CALCULATION on the plane page.*

**Follow the PROCEDURE properly to get the correct conclusion.*

**MATHS PRACTICAL COPY must be a soft cover Lab copy with atleast 50 to 60 pages.*

AIM : To identify rectangular objects and to calculate its area and Perimeter . Also determine the square with maximum area that can be made from each of the selected rectangles.

MATERIALS REQUIRED

1. Ruler , 2. Pencil

METHODOLOGY

Area of a Rectangle = Length X Breadth

Perimeter of a Rectangle = 2 (Length + Breadth)

Area of a Square = Side x Side

PROCEDURE

Select atleast four rectangular objects from the surroundings , measure its length and breadth. (eg. Note book cover , table top , Notice board , Floor tile etc.). Calculate its Area and Perimeter with the help of formula. Also calculate the area of a Square with maximum area that can be made from each of the selected rectangles.

OBSERVATION TABLE

Trial No	Name of the objects	Dimensions		Area	Perimeter	Square	
		Length	Breadth			Side	Area
1							
2							
3							
4							

CONCLUSION

Dimension of the Square with maximum area that can be made from a rectangle is _____ of the rectangle.