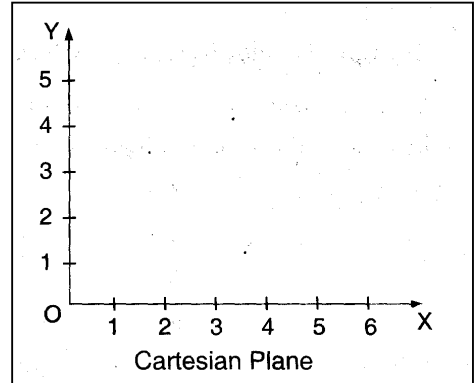


## 8<sup>th</sup> - Introduction to Graphs



Graphs are visual representation of data collected from various sources. Linear graph displays data that changes continuously over a period of time.

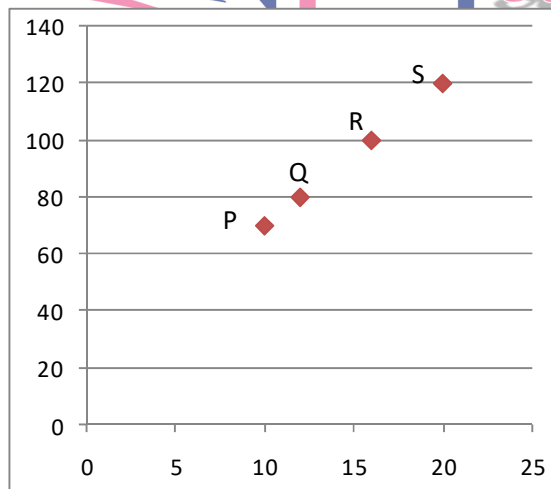
The point O is known as the origin and OX and OY are known as x axis and y axis respectively. The lines Ox and OY are together known as the coordinate axes and the XOY plane is known as Cartesian plane.



We call x-coordinate as abscissa of any point and y-coordinate as ordinate of that point. These two taken together constitute an ordered pair (2, 3) consisting of x-coordinate at the first place and y-coordinate at the second place. The position of x-coordinate and y-coordinate cannot be interchanged. The coordinates of origin O are taken as (0, 0). If a point lies on the x-axis, its coordinates are (x, 0), i.e. its y-coordinate is zero. If a point lies on the y-axis, its coordinates are (0, y), i.e. its x-coordinate is zero.

The Coordinate axes divide the Cartesian plane in four quadrants.

- Plot A (10, 0), B (3, 5), C (8, 2), D (0, 3) on the graph paper.
- In which quadrant the following points will lie? (-5, -7), (-4, 5)
- Write the ordered pairs when :
  - Abscissa = 1, ordinate = -3
  - Abscissa = -2, ordinate = -6
- Plots the points A (3,0), B (5,0) and C (8,0). What do you observe where do they lie? Also, plot the points P (0,2), Q (0,5) and R(0,9). Do they lie on x-axis?
- Plots the points A (2,8), B (7,8) and C (12,8). Join these points in pairs. Do they lie on a line? What do you observe?
- Locate the points :
  - (1,1), (1,2), (1,3), (1,4)
  - (2,1), (2,3), (3,3), (4,3)
- Find the coordinates of points P, Q, R, S in fig:



- The quantity of petrol filled in a car and the cost of petrol are given in the following table :

Litres of petrol filled	10	15	20	25
Cost of petrol	500	750	1000	1250



## 8<sup>th</sup> - Introduction to Graphs

Draw a graph representing the above data. Also, find the cost of 12 litres of petrol using the graph. How much petrol can be purchased for Rs 800?

9. Draw the temperature- time graph in each of the following cases :

Time(in hours)	7:00	9:00	11:00	13:00	15:00	17:00	19:00	21:00
Temperature in(°F)	100	101	104	102	100	99	100	98

10. The runs scored by two teams A and B in first 10 over's are given below :

Overs	I	II	III	IV	V	VI	VII	VIII	IX	X
Team A	2	1	8	9	4	5	6	10	6	2
Team B	5	6	2	10	5	6	3	4	8	10

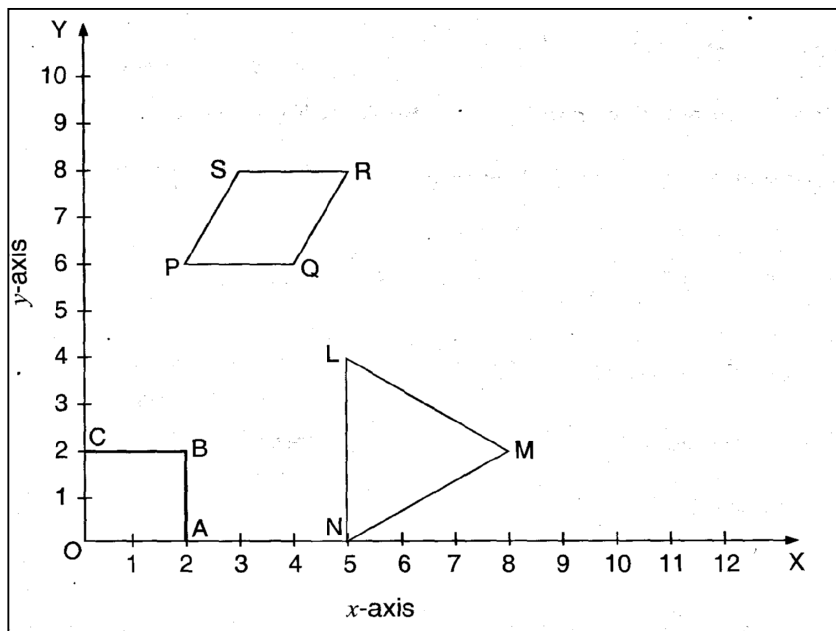
Draw a graph depicting the data, making the graphs on the same axes in each case in two different ways as a graph and as a bar chart.

11. Ajit can ride a scooter constantly at a speed of 30 km/hr. Draw time-distance graph. Find:

- Time taken by Ajit to ride 75 km
- Distance covered by Ajit in 3 hours.

12. Draw a graph to represent the relation between time and simple interest on a sum of 200 Rs. at the rate of 5% per annum.

13. Write the coordinates of the vertices of each polygon given below:



14. The runs scored by the Indian and Australian teams in first 9 over's are given below. Draw a graph showing data marking on the same axis in each case.

Overs		I	II	III	IV	V	VI	VII	VIII	IX
Runs	India	3	4	6	5	7	8	10	5	6
	Australia	5	6	8	9	10	12	4	6	8