

Important Questions Class 8 Maths Chapter 13 - Introduction to Graphs

Very Short Answer Type Questions: (1 Marks)

1. The point where x -axis and y -axis meet is called _____?

Ans: Origin

2. In which quadrant does the point $(-3, 2)$ lie?

(a) II

(b) I

(c) III

(d) IV

Ans: (a) II

3. On which axis does the point $(0, -6)$ lie?

(a) x -axis

(b) y -axis

(c) origin

(d) None of these

Ans: (b) y -axis

4. Perpendicular distance of the point $(2, 3)$ from x -axis is

(a) 2

(b) 3

(c) 00

(d) None of these

Ans: (b) 33

5. A pictorial representation of data in the form of rectangular bars to show comparison among categories is called _____?

Ans: Bar graph

6. The co-ordinates of origin is

(a) $(x,0)$ ($x , 0$)

(b) $(0,y)$ ($0 , y$)

(c) $(0,0)$ ($0 , 0$)

(d) None of these

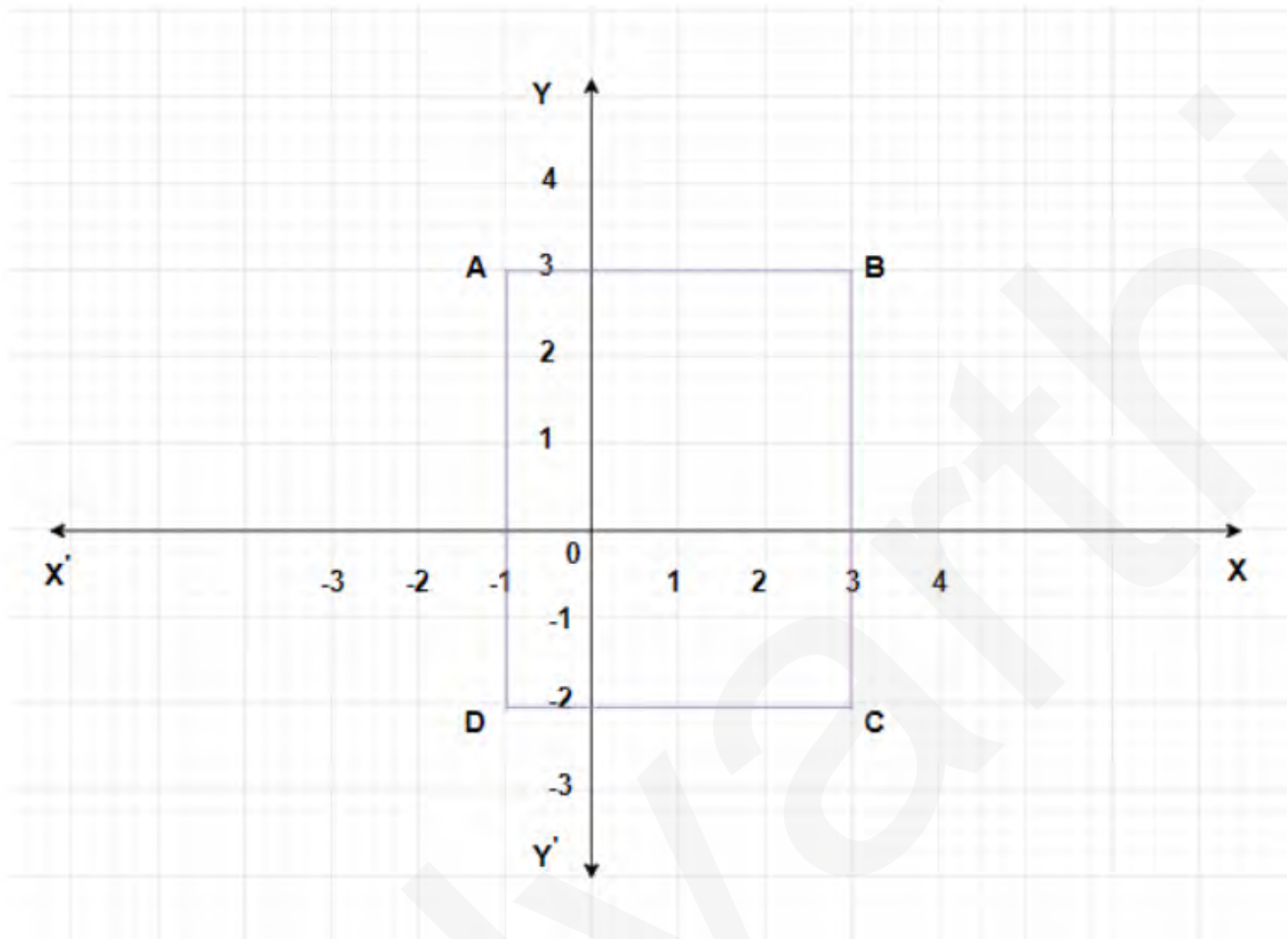
Ans: (c) $(0,0)$ ($0 , 0$)

7. What is a pie graph?

Ans: Data can be represented by dividing a circle into sectors. This type of representation of data is called a pie graph. It shows us the relation of parts to the whole.

Short Answer Type Questions: (2 Marks)

8. Find the co-ordinates of the points A, B, C, D from the graph



Ans: The co-ordinates of the point

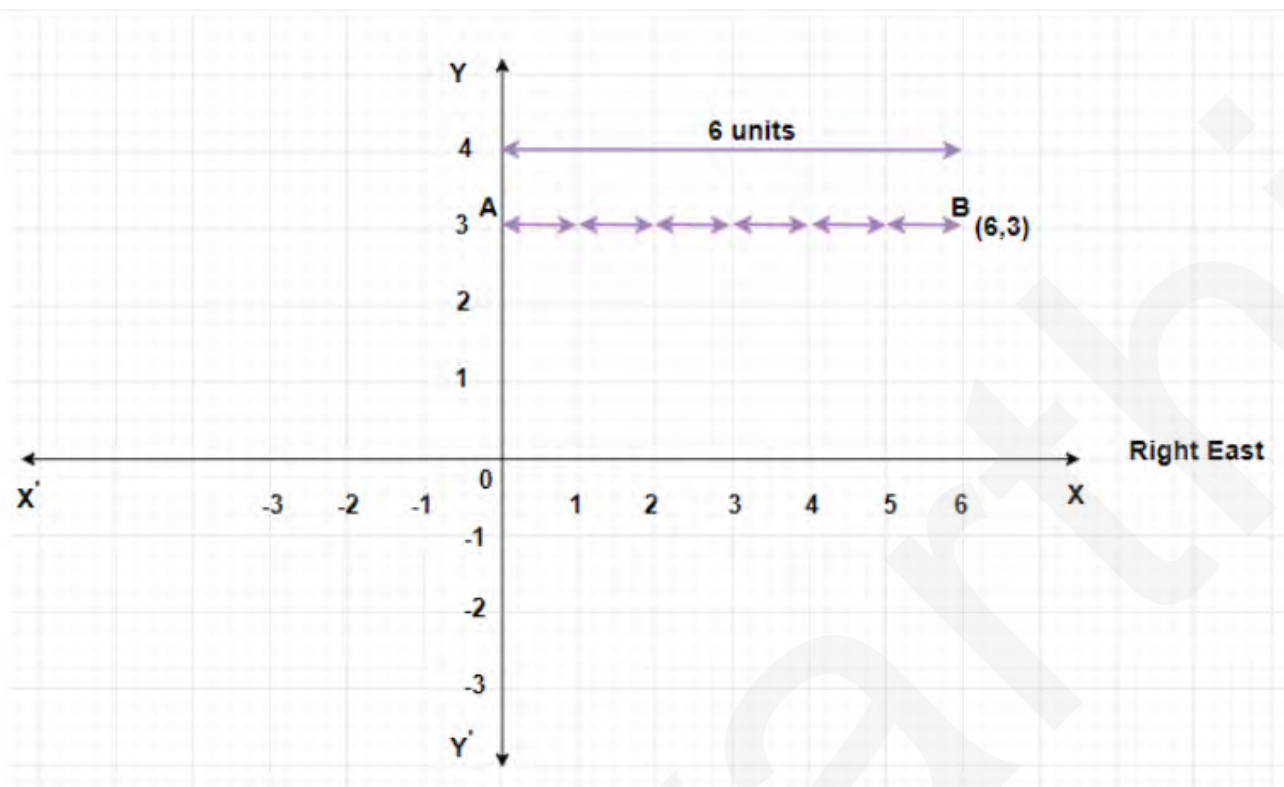
$$A=(-1,3)A = (- 1 , 3)$$

$$B=(3,3)B = (3 , 3)$$

$$C=(3,-2)C = (3 , - 2)$$

$$D=(-1,-2)D = (- 1 , - 2)$$

9. If a man moves 66 units right due (east) from point A, then find the co-ordinates of his new position.



Ans: The position of point A = (3, 0) A = (3 , 0)

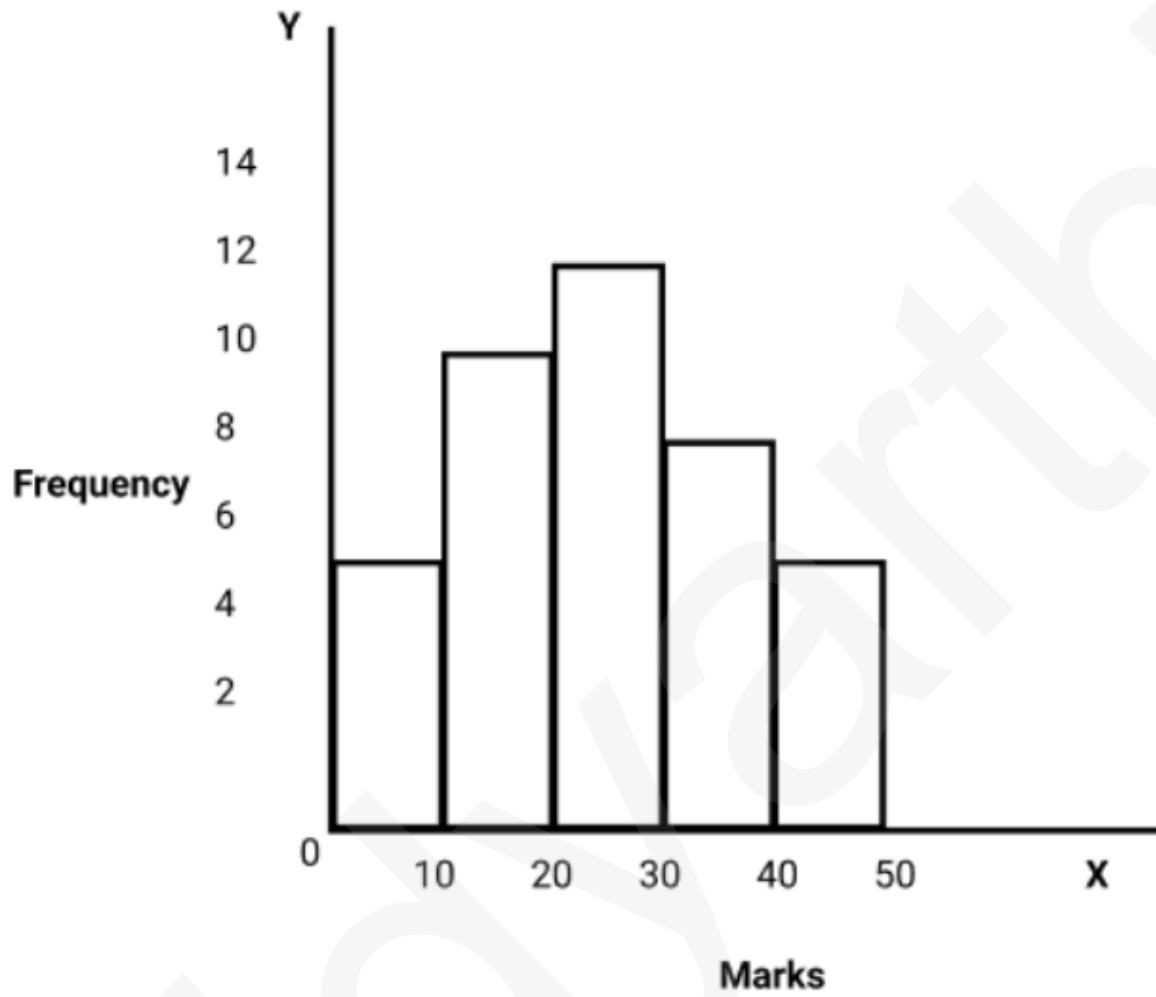
If a man moves 66 units right from point AA then new position of man will be at B=(6,3)
 $B = (6 , 3) .$

10. In a class of 4040 students, the marks obtained in maths subject (out of 5050) are as given below

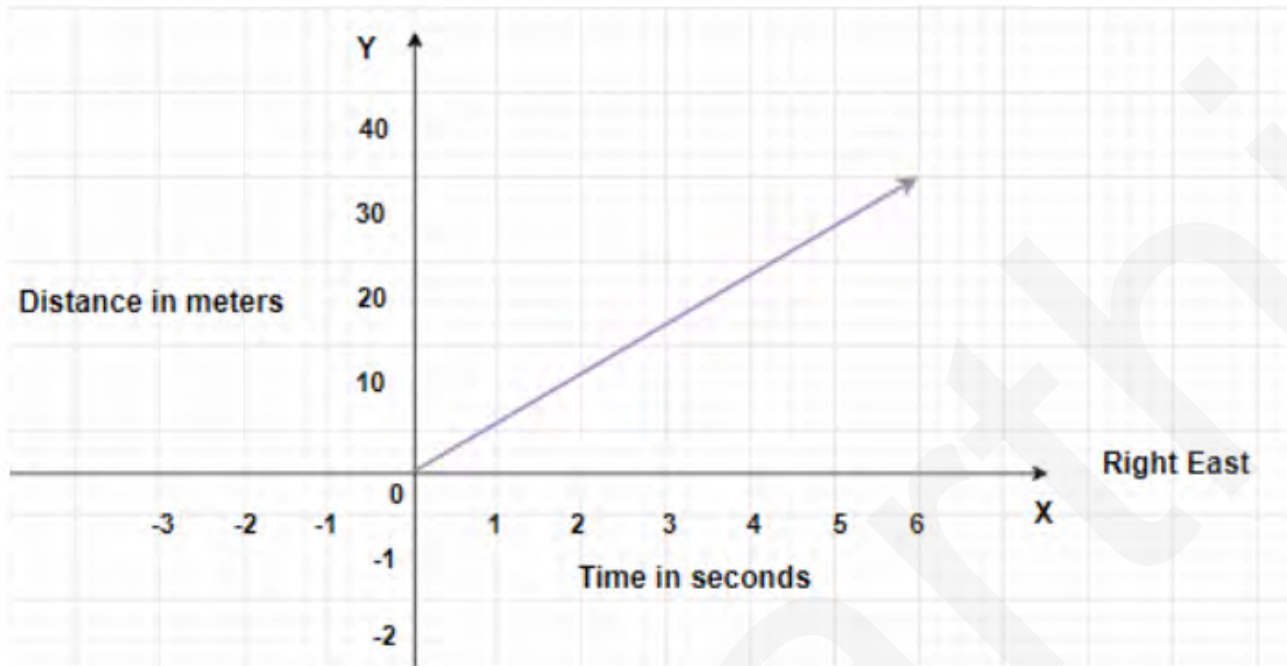
Marks	0-10	10-20	20-30	30-40	40-50
	0 – 10	10 – 20	20 – 30	30 – 40	40 – 50
Number of students	55	1010	1212	88	55

Draw histogram?

Ans:



11. Find the time taken by a body to cover 3030 meters. Hence find speed?



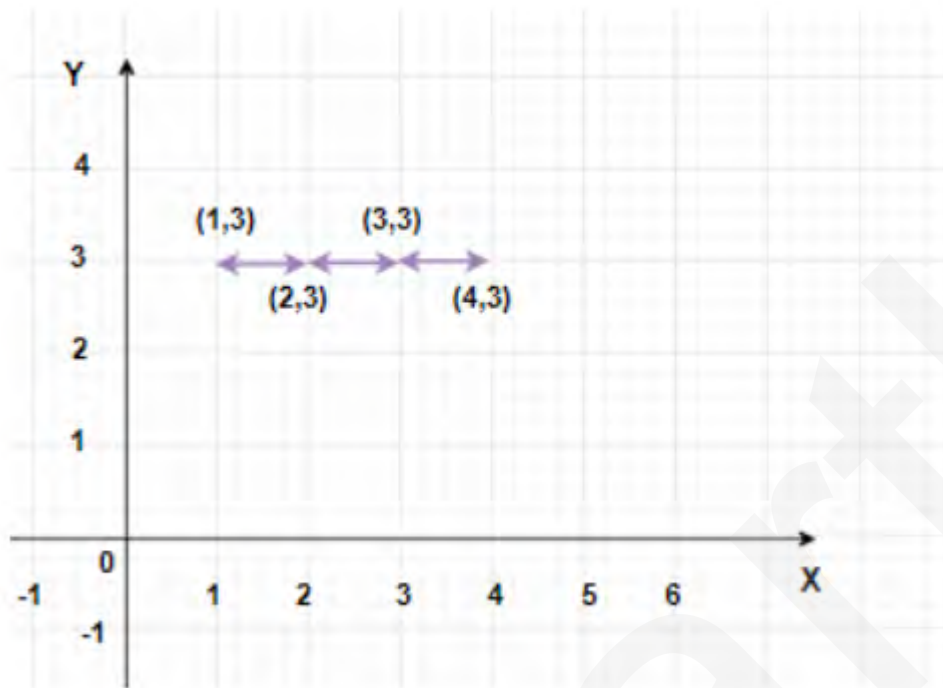
Ans: Time taken to cover a distance of 30m = 6 seconds

$$\text{Speed} = \frac{\text{Distance covered}}{\text{Time taken}} \quad \text{Speed} = \frac{\text{Distance covered}}{\text{Time taken}}$$

$$\text{Speed} = \frac{30\text{m}}{6\text{s}} = 5\text{ms}^{-1}$$

12. Plot the following points. Verify if they lie on a line? (1,3), (2,3), (3,3), (4,3)
 (1,3), (2,3), (3,3), (4,3)

Ans: We plot the given point on a graph to check if they lie on line

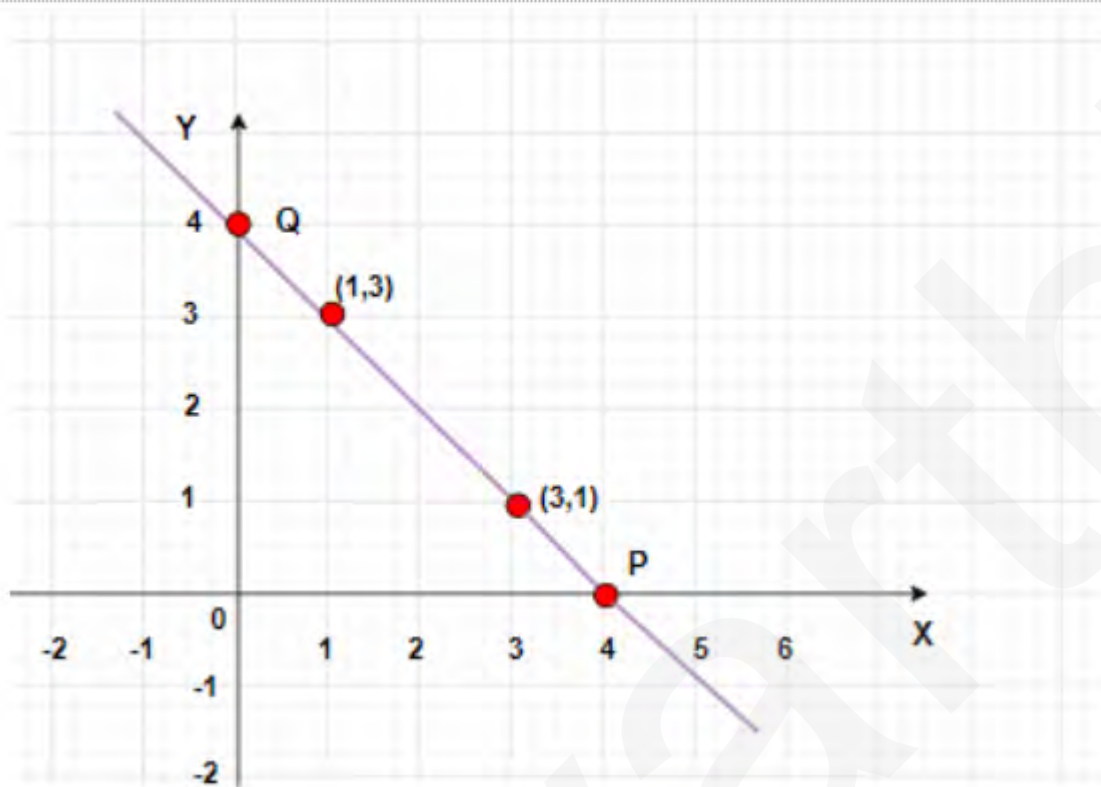


Yes, they lie on a line.

Short Answer Type Questions: (3 Marks)

13. Draw a line passing through $(3,1)$ and $(1,3)$. Find the co-ordinates of the points at which this line meets the x -axis and y -axis.

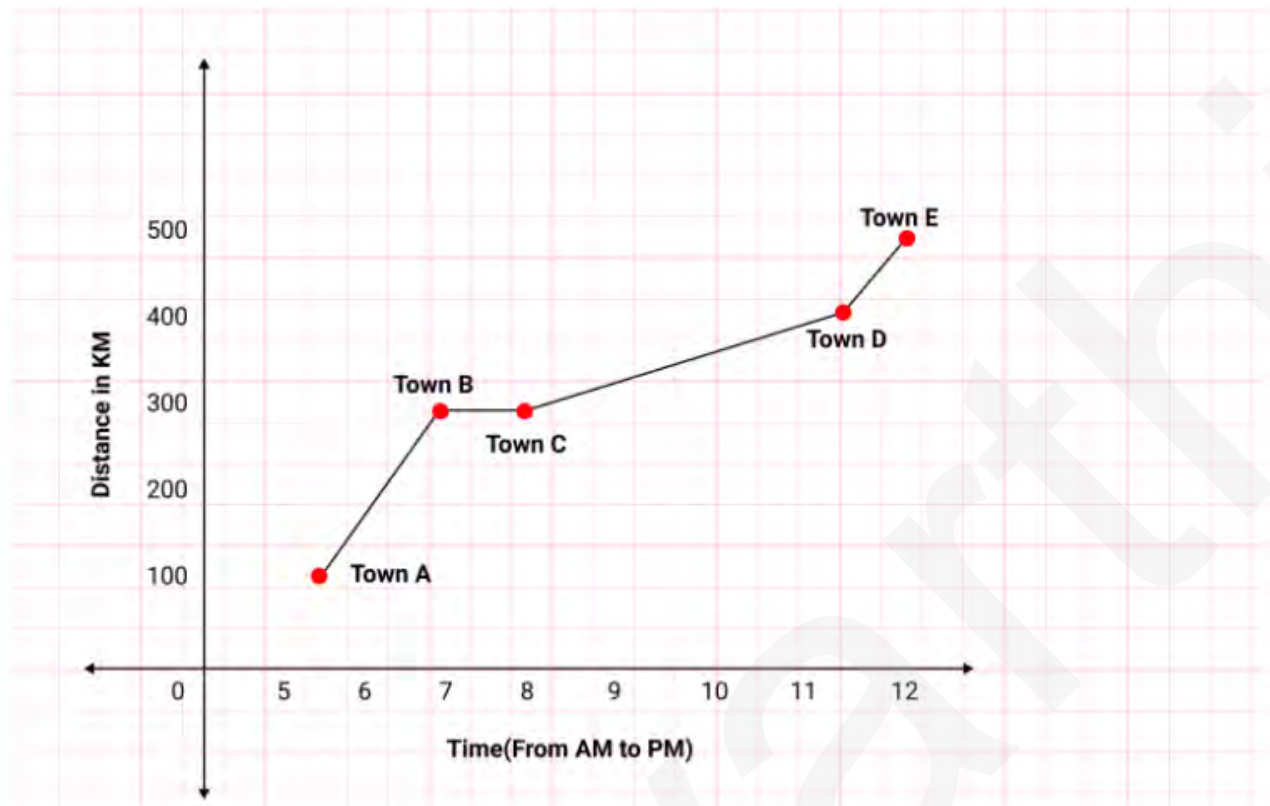
Ans: The co-ordinates of the point on x -axis and y -axis is where the line meets axes.



x-axis, $P=(4,0)$ $P = (4, 0)$

y-axis, $Q=(0,4)$ $Q = (0, 4)$

14. Following graph gives the movement of a car from a town AA to town DD. Study the graph and answer the following questions:



(a) What is the distance between town AA and town DD ?

Ans: $A=(5.5,100)=(X_1,Y_1)$ $A = (5.5 , 100) = (X_1 , Y_1)$

$D=(11.5,500)=(X_2,Y_2)$ $D = (11.5 , 500) = (X_2 , Y_2)$

(b) At what time did car start from town AA?

Ans: Car starts from town AA by 5:30 5 : 30 am.

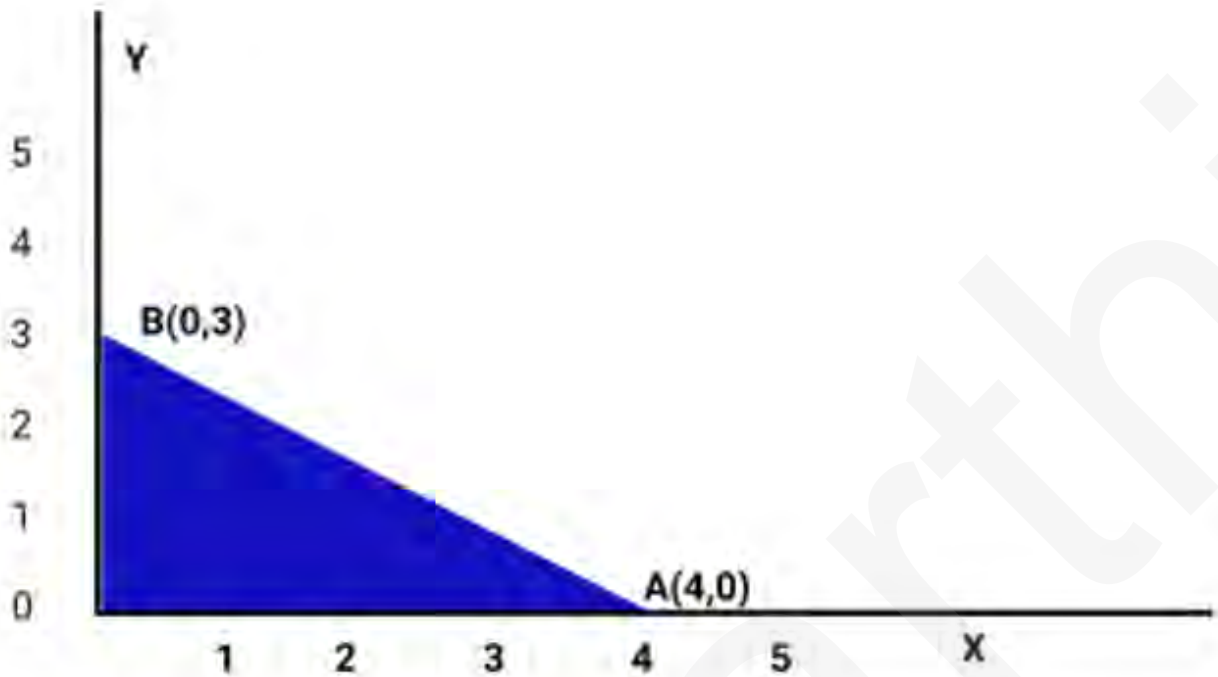
(c) Where did the car stop and for what duration?

Ans: Car stopped at town BB by 11 hour duration.

15. Plot the points $A(4,0)$ $A (4 , 0)$ and $B(0,3)$ $B (0 , 3)$ on the graph. Also find the length of hypotenuse of triangle AOB

Ans: $OA=x-OA = x - \text{co-ordinate of point } A=4$ $A = 4$

$OB=y-OB = y - \text{co-ordinate of point } B=3$ $B = 3$



$$\text{Hypotenuse } AB = \sqrt{4^2 + 3^2} = \sqrt{16 + 9} = \sqrt{25} = 5$$

$$AB = \sqrt{16 + 9} = \sqrt{25} = 5$$

$$AB = \sqrt{25} = 5$$

$$AB = 5$$

16. Make a table of values for the function $y = 4x$, From the table find the value's of y when $x = 4$ and $x = 5$

Ans: $y = 4x$

X	0	1	-1	2	-2
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Y	0	4	-4	8	-8
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At $x=4$, $y=4(4)=16$ $y = 4 (4) = 16$

$x=5$, $y=4(5)=20$ $y = 4 (5) = 20$

17. State true or false

(a) A point whose x -co-ordinates is zero and y -co-ordinates is non-zero will lie on the y -axis

(b) The co-ordinates of the origin are $(0,0)$

(c) A point whose y -co-ordinates is zero and x -co-ordinates is 4 will lie on the x -axis

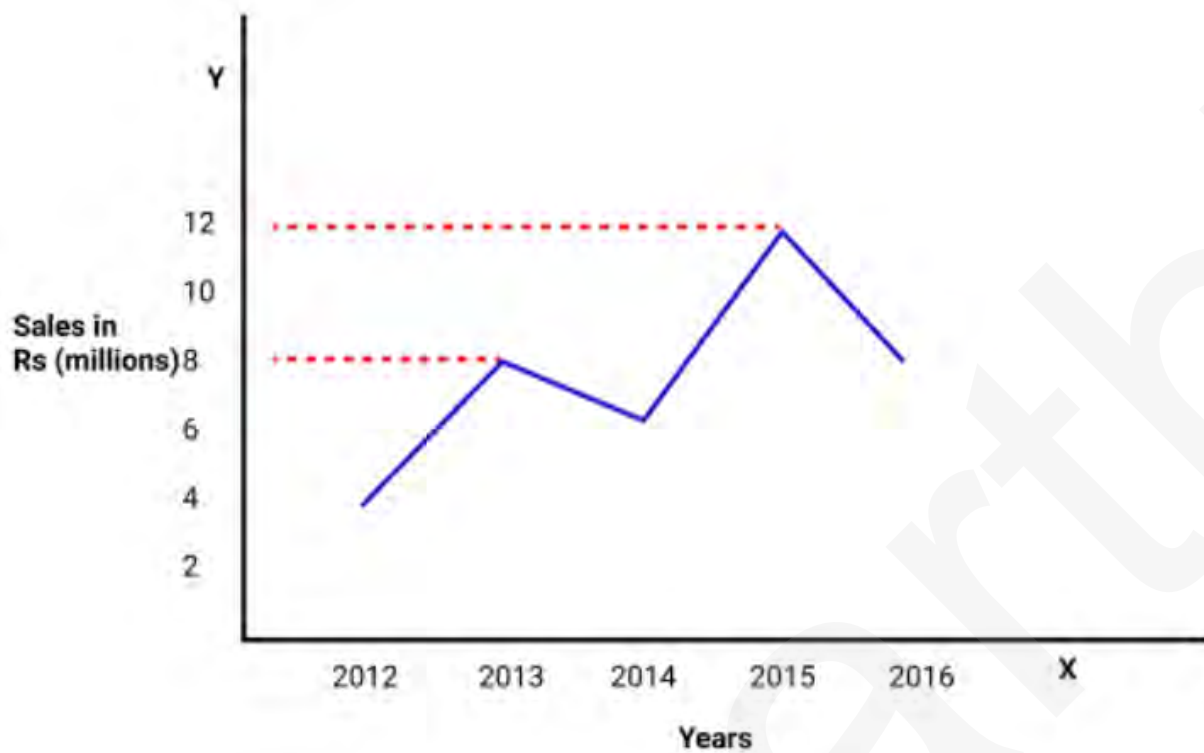
Ans:

(a) True

(b) True

(c) False

18. From the given graph, compute the difference between the sales of 2013 and 2015



In which year sales are high?

Ans:

Sales in 2015 – 12 million

Sales in 2013 – 8 million

The difference between the sales in 2015 and 2013

$$= 12 - 8 = 4 = 12 - 8 = 4 \text{ million}$$

In 2015 the sales are high.

19. Draw the histogram to represent the following data and define linear graph.

Class - interval	50-60	60-70	70-80	80-90
	50 – 60	60 – 70	70 – 80	80 – 90

Frequency

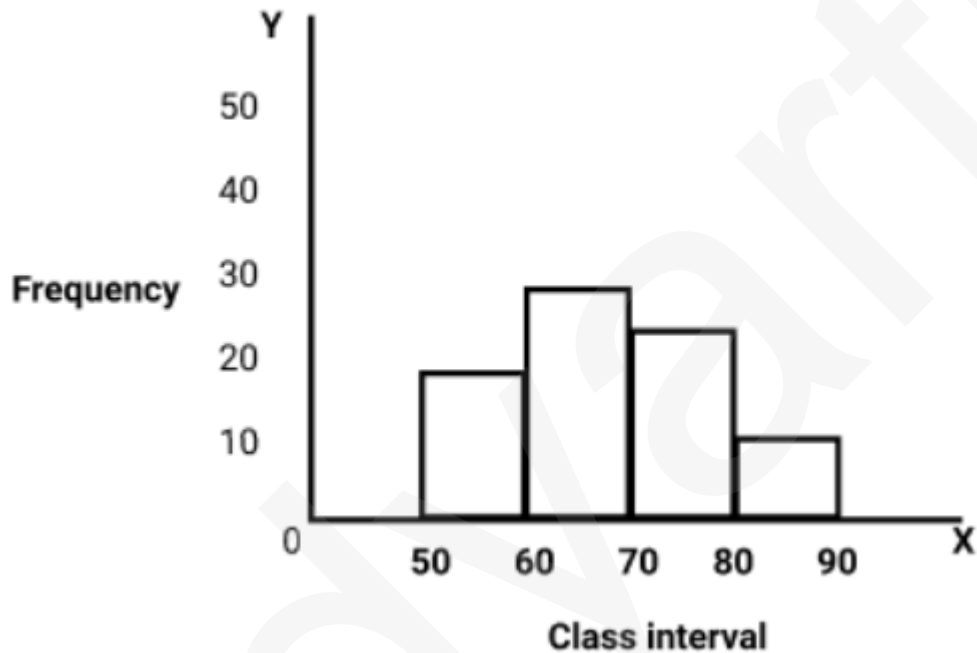
2020

3030

2525

1010

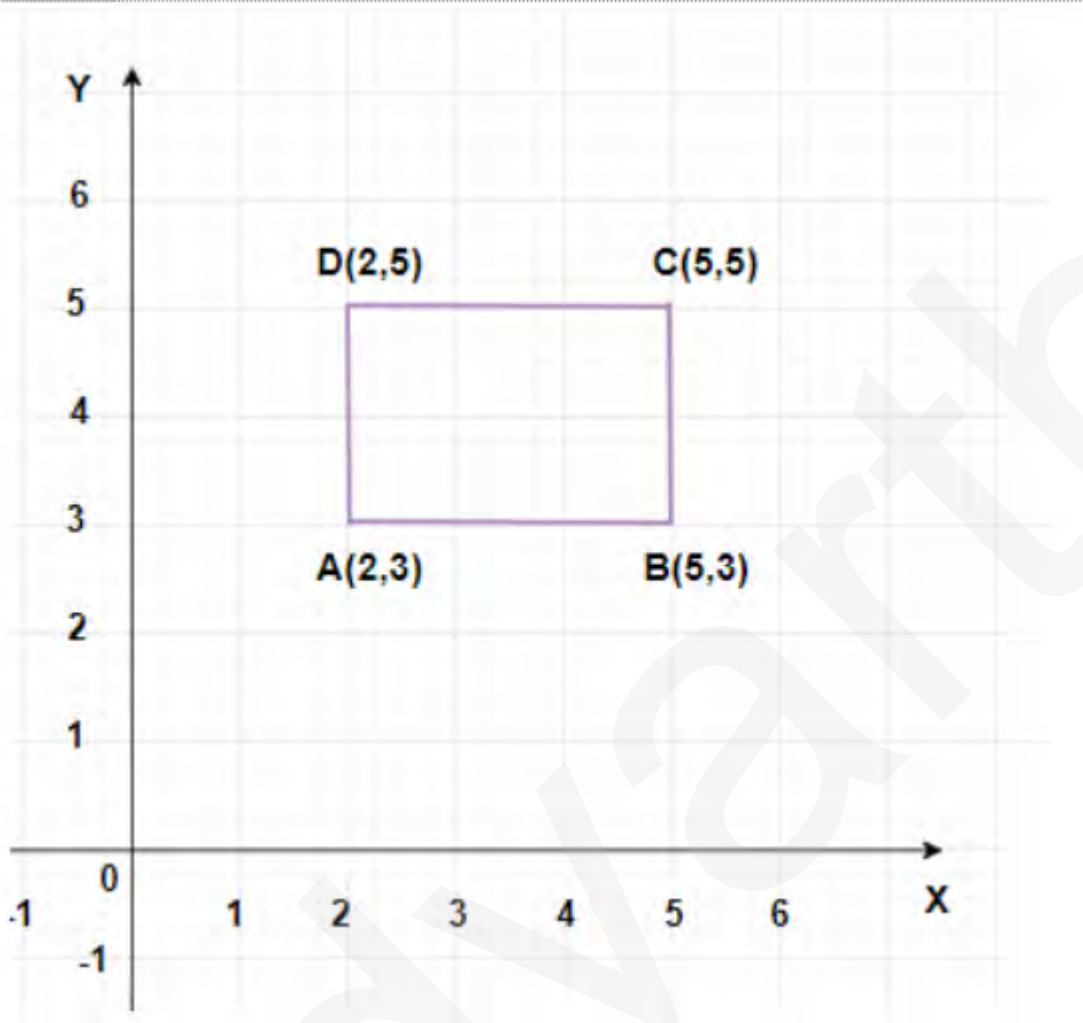
Ans:



A line graph which is a whole unbroken line is called a linear graph.

20. Plot the points $A(2,3)$, $B(5,3)$, $C(5,5)$, $A(2,3)$, $B(5,3)$, $C(5,5)$ and $D(2,5)$ on graph. Connect the points in that order. So as to get a closed figure ABCD. What type of figure do you get?

Ans:



The figure ABCDABCD obtained is a rectangle.

Long Answer Type Questions: (5 Marks)

21. Reena deposited Rs12,00012 , 000 in a bank at the rate of 10%10% per annum. Draw a linear graph showing the relationship between the time and simple interest. Also find the simple interest for 44 years.

Ans: $P=12,000P = 12 , 000$

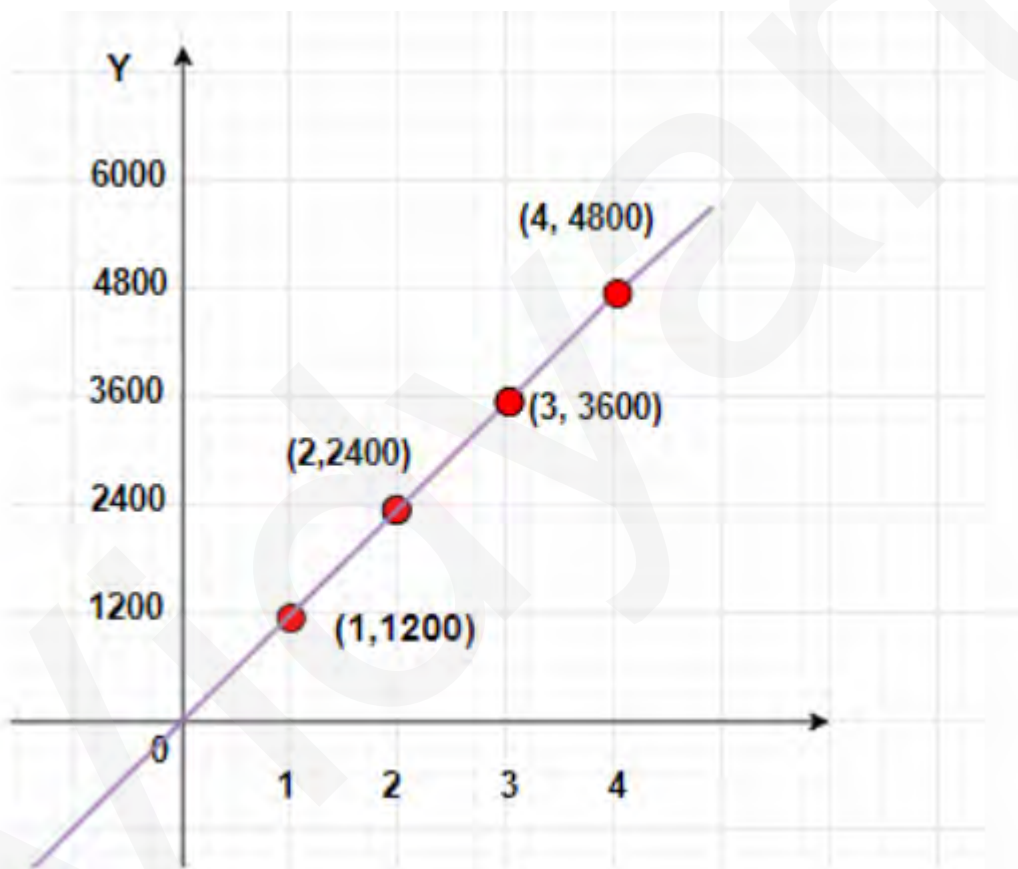
$R=10\%R = 10\%$

Simple interest for one year $= \frac{PTR}{100} = \frac{PTR}{100}$

$$=12000 \times 10 \times 100 \times 1 = 12000 \times \frac{10}{100} \times 1$$

$$=1200 = 1200$$

Time	11	22	33	44
Simple interest	12001200	24002400	36003600	48004800



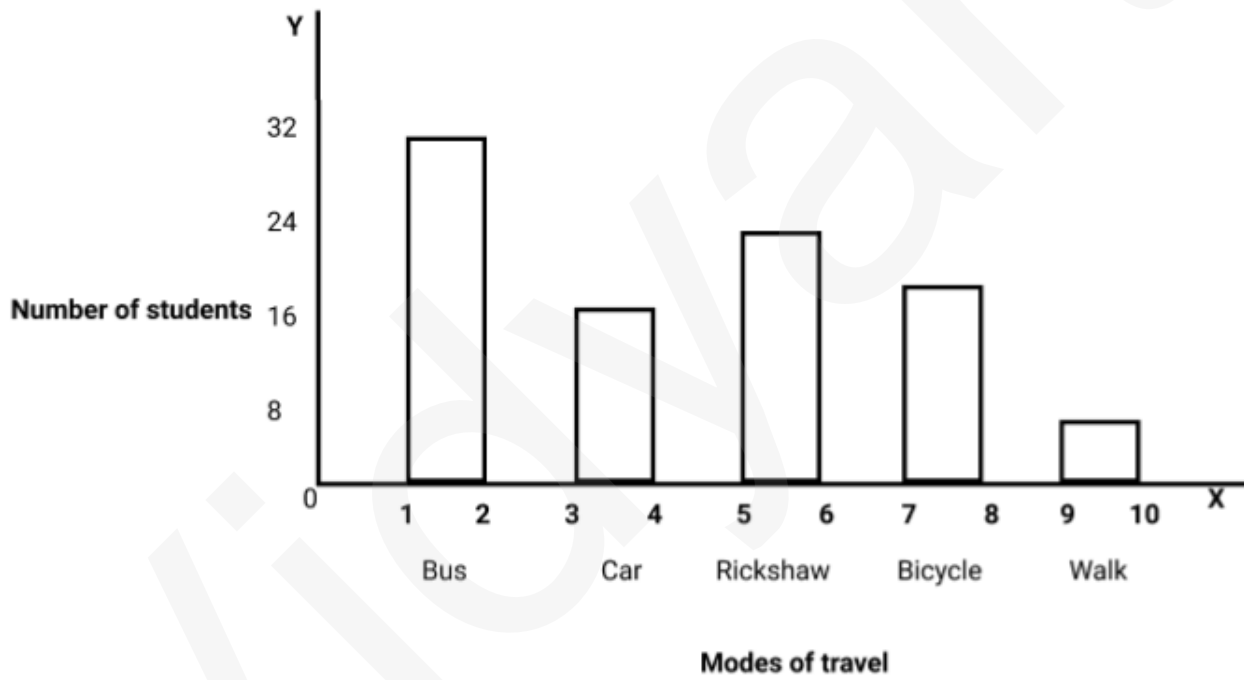
Simple interest after 44 years is 48004800.

22. Hundred students from a certain locality use different modes of travelling to school as given below. Draw a bar graph which is maximum mode of travel?

Bus	Car	Rickshaw	Bicycle	Walk
32	16	24	20	8

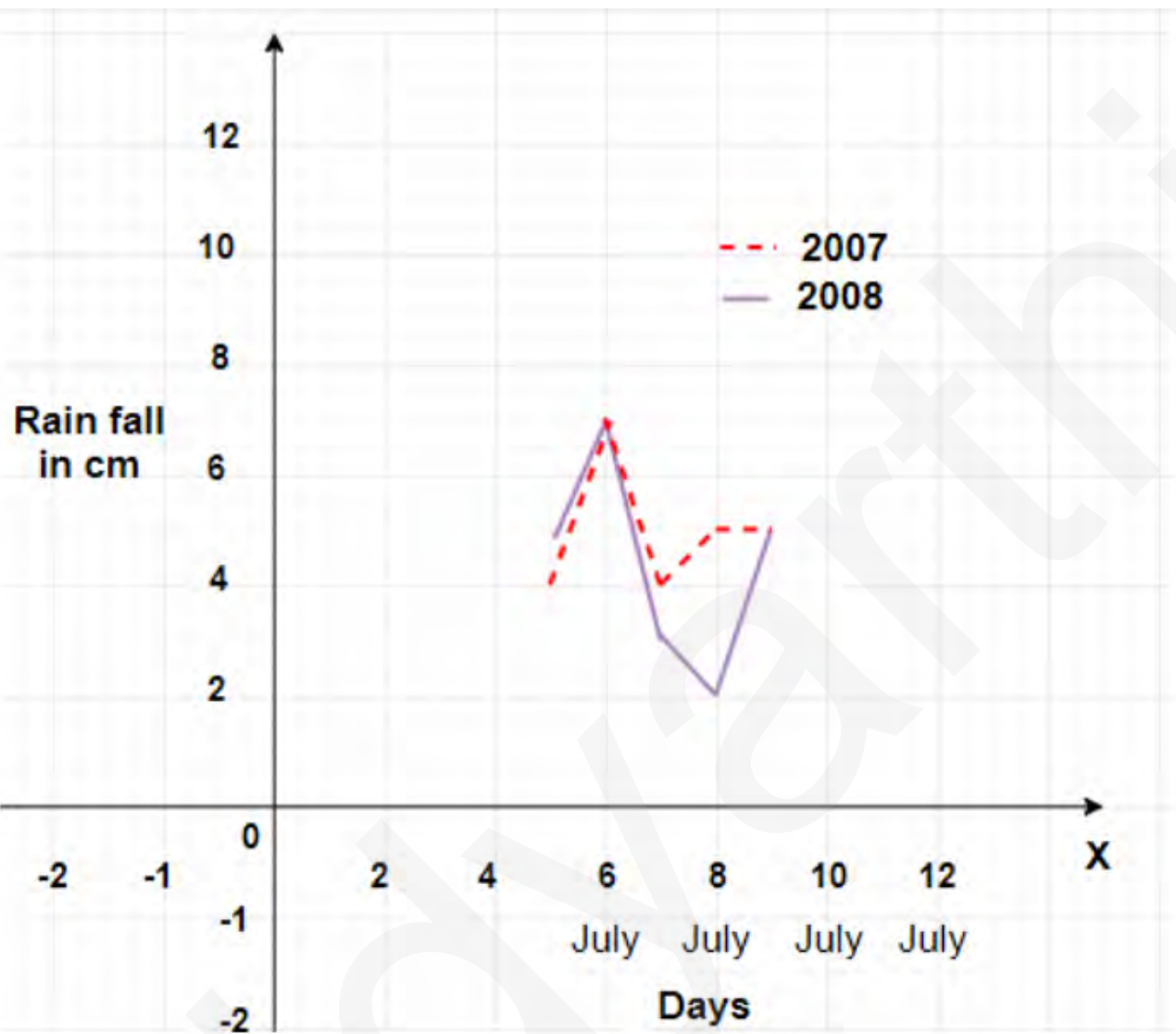
Ans: Scale: on x-axis 1cm = 1 unit

On y-axis 1cm = 8 units



Maximum mode of travel is bus.

23. Study the following graph and answer the following questions



Ans:

(a) Which year has better rainfall?

Ans: 2007

(b) On how many days the rainfall was same?

Ans: For 6th July and 9th July of 2007 the rainfall was same.

(c) Name the only date on which 2008 got more rainfall?

Ans: On 5th July of 2008 rainfall is max (5cm)

(d) On which date the difference between the rainfall of the 22 years was biggest?

Ans: 8th July

(e) What is the difference between the rainfall of 2007 and 2008 on July 8th ?

Ans: 3cm of difference

On July 8th in 2007 = Rainfall = 5cm

On July 8th in 2008 = Rainfall = 2cm

Difference = 5 - 2 = 3cm

24. If $y = x^2$, then draw a graph.

Ans:

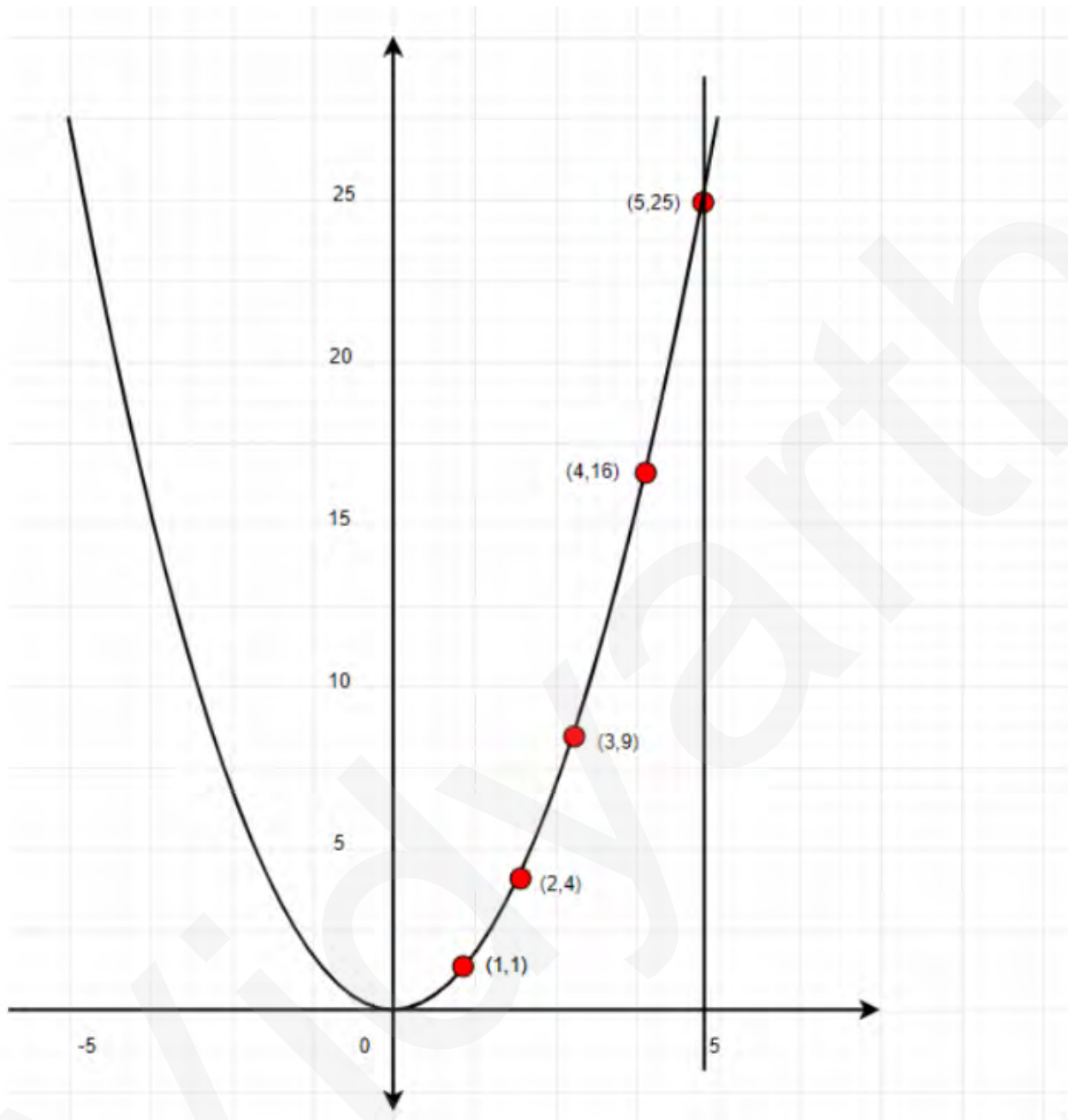
XX 11 22 33 44 55

YY 11 44 99 1616 2525

The graph is drawn as follows:

Scale: On x-axis 55 units = 1cm

On y-axis 1010 units = 1cm



25. A train is moving at a constant speed of 60kmh^{-1} to 160kmh^{-1} . Draw a distance - time graph

(a) How far will it travel in 22 hours 30 minutes

(b) Find the time required to cover a distance of 260km.

Ans:

Speed of train = $60 \text{ km/hr} = 60 \text{ km / hr}$

Table for distance - time graph is as follows:

Time (in hrs)	11	22	33	44	55
Distance travelled	6060	120120	180180	240240	300300

Scale:

On x-axis $1 \text{ cm} = 1 \text{ hr}$

On y-axis $1 \text{ cm} = 60 \text{ km}$

(a) Distance covered in 22 hours = $150 \text{ km} = 150 \text{ km}$

(b) Time required to cover a distance of $260 \text{ km} = 4.33 \text{ hrs}$.

