



# MATHS

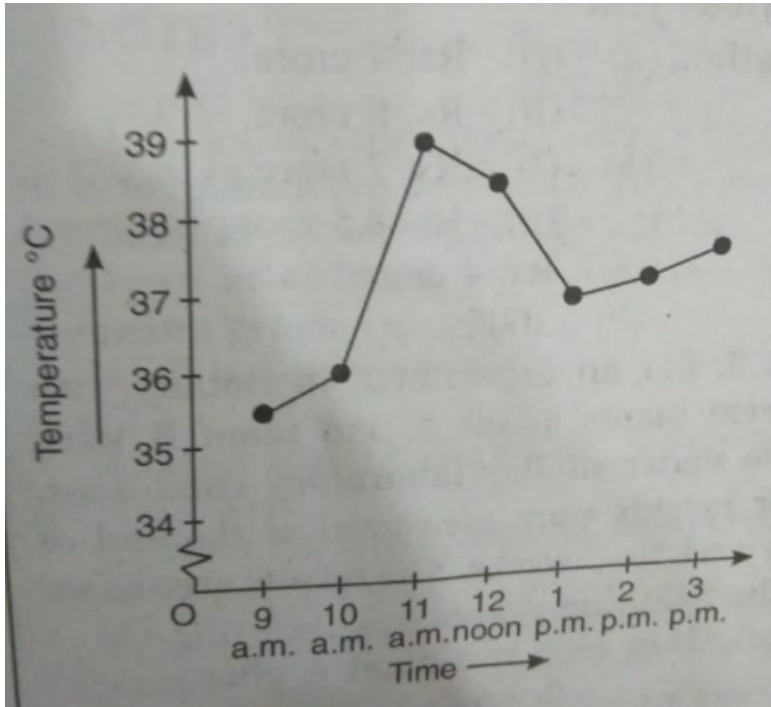
## BOOKS - NAND LAL PUBLICATION

### INTRODUCTION TO GRAPHS

#### Exercise 15 1

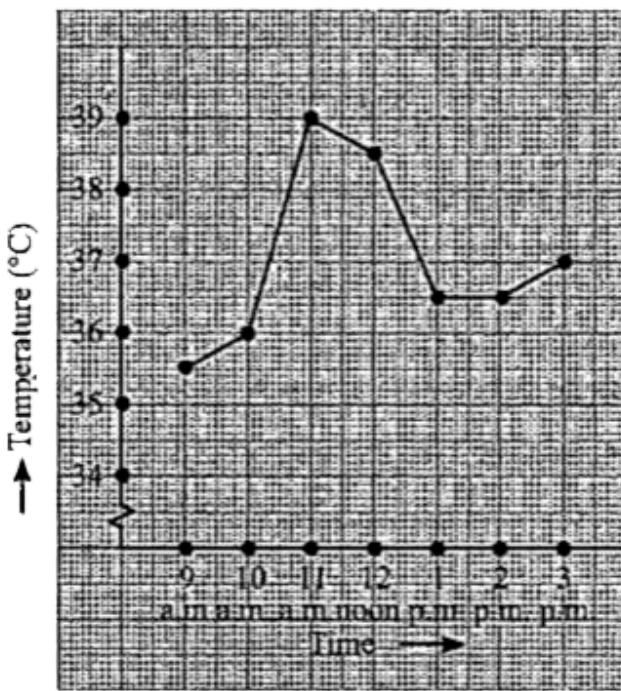
1. The following graph shows the temperature of a patient in a hospital, recorded every hour.

What was the patient's temperature at 1p.m.?



[Watch Video Solution](#)

2. When was the patient's temperature  $38.5^{\circ}C$ ?



[Watch Video Solution](#)

3. The following graph shows the temperature of a patient in a hospital, recorded every hour.

When was the patient's temperature was the

same two times during the period is given. What were these two times?

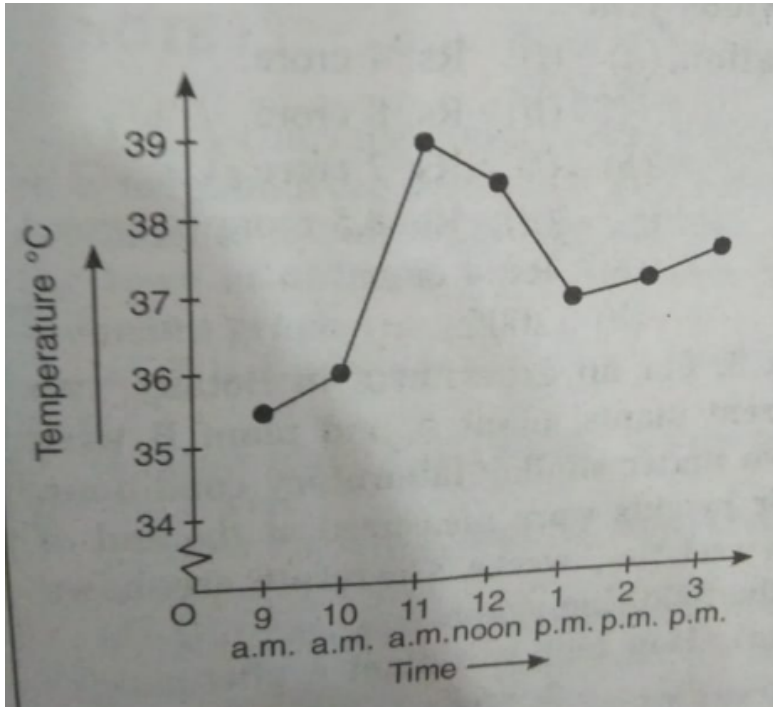


[Watch Video Solution](#)

4. The following graph shows the temperature of a patient in a hospital, recorded every hour.

What was the temperature at 1.30 pm. ? How

did you arrive at your answer ?



[Watch Video Solution](#)

5. The following graph shows the temperature of a patient in a hospital, recorded every hour.

During which periods did the patient's temperature showed an upward trend?



**Watch Video Solution**

6. The following line graph shows the yearly sales figures for a manufacturing company:

What were the sales in (i) 2002 (ii) 2006?



**Watch Video Solution**

7. The following line graph shows the yearly sales figures for a manufacturing company:

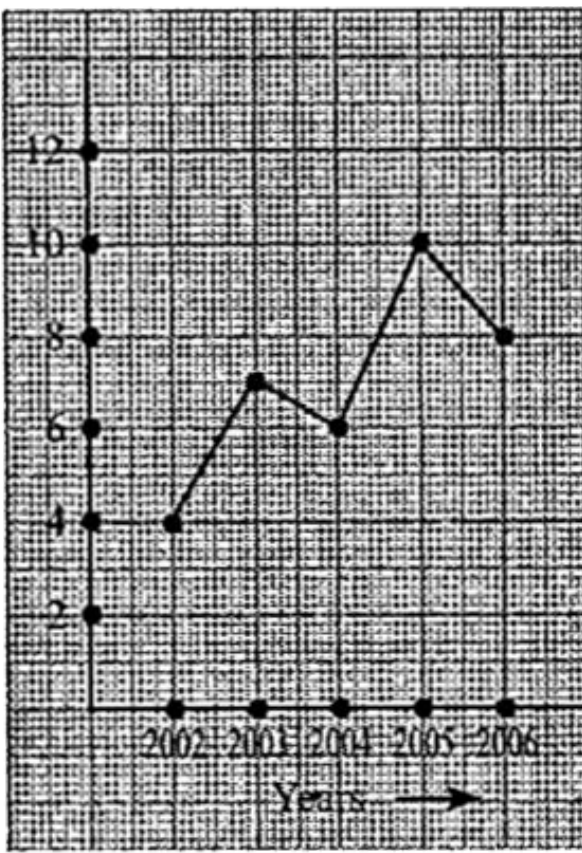
What were the sales in (i) 2002 (ii) 2006?



[Watch Video Solution](#)

8. Compute the difference between the sales in 2002 and 2006 .

→ Sales (in ₹ crores)



[Watch Video Solution](#)

9. The following line graph shows the yearly sales figures for a manufacturing company: In




which year was there the greatest difference between the sales as compared to its previous year?



[Watch Video Solution](#)

**10.** For an experiment in Botany, two different plants, plant A and plant B were grown under similar laboratory conditions. Their heights were measured at the end of each week for 3 weeks. The results are shown by the following

graph.

 How high was Plant A after (i) 2 weeks (ii) 3 weeks?



[Watch Video Solution](#)

**11.** For an experiment in Botany, two different plants, plant A and plant B were grown under similar laboratory conditions. Their heights were measured at the end of each week for 3 weeks. The results are shown by the following graph.

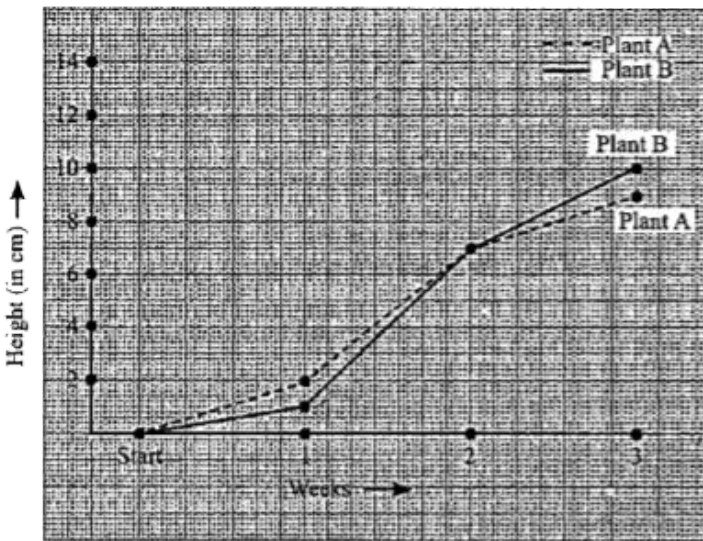


How high was Plant A after (i) 2 weeks (ii) 3 weeks?



[Watch Video Solution](#)

**12.** For an experiment in Botany , two different plants , plant A and plant B were grown under similar laboratory conditions . Their heights were measured at the end of each week for 3 weeks .The results are shown by the following graph :



How much did Plant A grow during the 3rd week ?



[Watch Video Solution](#)

**13.** For an experiment in Botany, two different plants, plant A and plant B were grown under

similar laboratory conditions. Their heights were measured at the end of each week for 3 weeks. The results are shown by the following graph.



How high was Plant A after (i) 2 weeks (ii) 3 weeks?



[Watch Video Solution](#)

**14.** For an experiment in Botany, two different plants, plant A and plant B were grown under similar laboratory conditions. Their heights

were measured at the end of each week for 3 weeks. The results are shown by the following graph.



How high was Plant A after (i) 2 weeks (ii) 3 weeks?



[Watch Video Solution](#)

**15.** For an experiment in Botany, two different plants, plant A and plant B were grown under similar laboratory conditions. Their heights were measured at the end of each week for 3

weeks. The results are shown by the following graph.



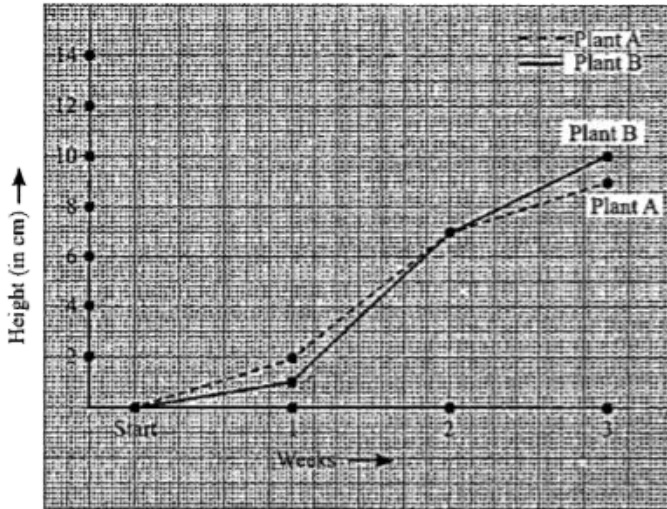
How high was Plant A after (i) 2 weeks (ii) 3 weeks?



[Watch Video Solution](#)

**16.** For an experiment in Botany , two different plants , plant A and plant B were grown under similar laboratory conditions . Their heights were measured at the end of each week for 3 weeks .The results are shown by the following

graph :



Were the two plants of the same height during any week shown here ? Specify .



[Watch Video Solution](#)



**17.** The following graph whose temperature forecast and the actual temperature for each day of a week.

On which days was the forecast temperature the same as the actual temperature ?

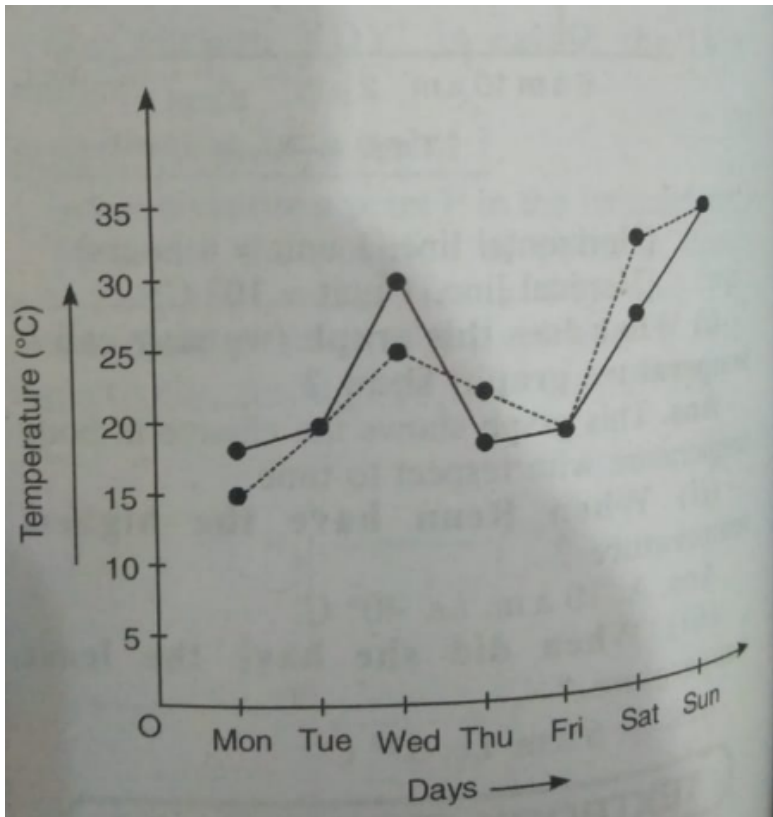


**Watch Video Solution**

**18.** The following graph whos the temperature forecast and the actual temperature forecast

and the actual temperature for each day of a week.

What was the maximum forecast temperature during the week?



Watch Video Solution

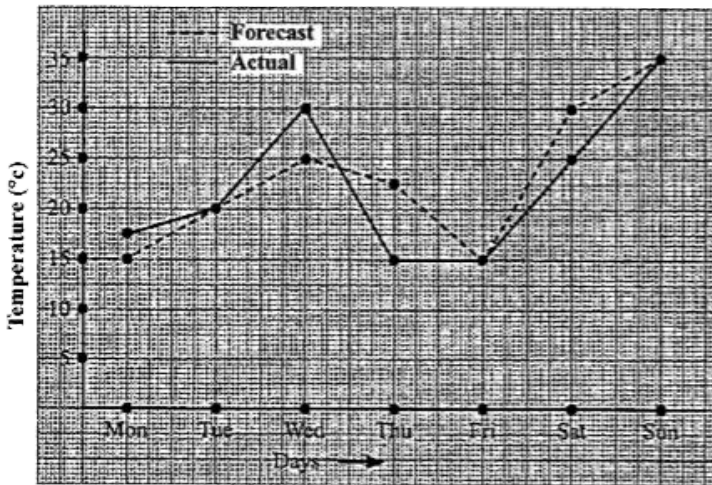
**19.** The following graph shows the temperature forecast and the actual temperature for each day of a week.

What was the minimum actual temperature during the week?



**Watch Video Solution**

20. On which day did the actual temperature differ the most from the forecast temperature ?



Watch Video Solution

21. Use the tables below to draw linear graphs

The number of days a hill side city received snow in different years .

Year	2003	2004	2005	2006
Days	8	10	5	12



[Watch Video Solution](#)

22. Draw the graph of Population (in thousands) of men and women in a village in

different years .

Year	2003	2004	2005	2006	2007
Number of Men	12	12.5	13	13.2	13.5
Number of Women	11.3	11.9	13	13.6	12.8



[Watch Video Solution](#)

**23.** A courier -person cycles from a town to a neighbouring suburban area to deliver a parcel to a merchant .His distance from the town at different times is shown by the following graph:

Did the person stop on his way ?Explain.



[Watch Video Solution](#)

24. A courier -person cycles from a town to a neighbouring suburban area to deliver a parcel to a merchant .His distance from the town at different times is shown by the following graph:

How much time did the person taken for the travel ?



[Watch Video Solution](#)

25. A courier -person cycles from a town to a neighbouring suburban area to deliver a parcel to a merchant .His distance from the town at different times is shown by the following graph:

How far is the place of the merchant from the town ?



[Watch Video Solution](#)



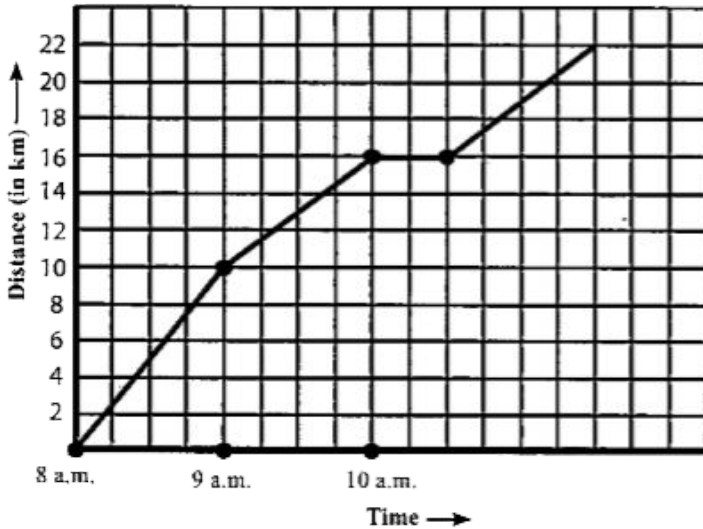
**26.** A courier -person cycles from a town to a neighbouring suburban area to deliver a parcel to a merchant .His distance from the town at different times is shown by the following graph:

Did the person stop on his way ?Explain.



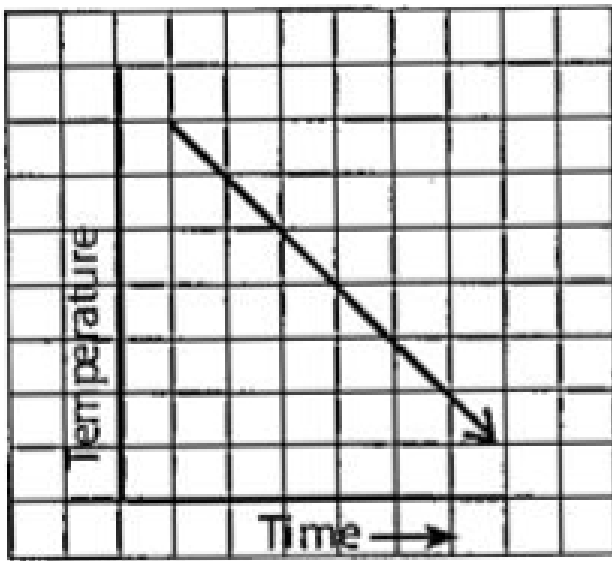
**Watch Video Solution**

27. During which period did he ride fastest ?



[Watch Video Solution](#)

28. Can there be a time temperature graph as follows ? Justify your answer .

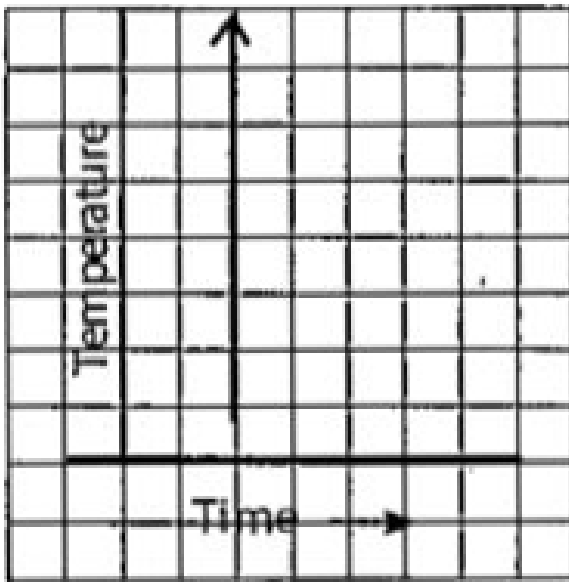


(i)



[Watch Video Solution](#)

**29.** Can there be a time temperature graph as follows ? Justify your answer .

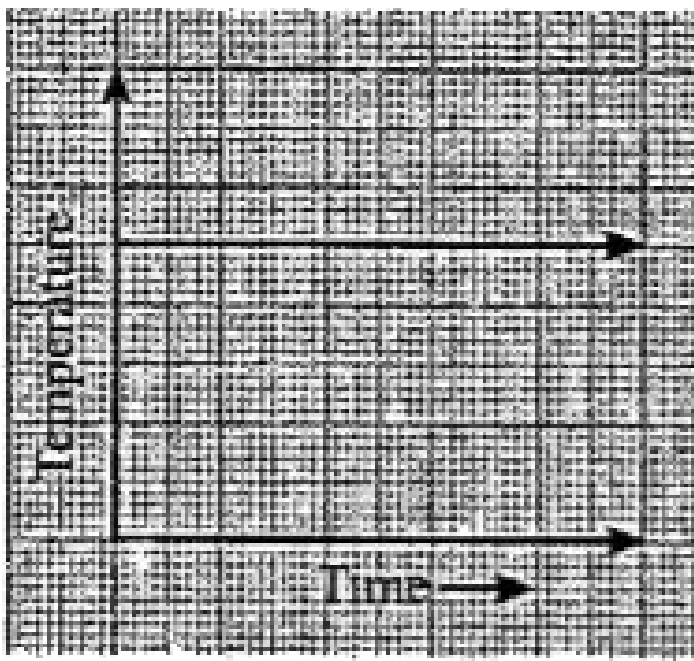


(i)



[Watch Video Solution](#)

**30.** Can there be a time temperature graph as follows ? Justify your answer .



(i)



[Watch Video Solution](#)

Exercise 15 2

1. Plot the following points on a graph sheet

.Verify if they lie on a line.

A (4,0),B(4,2),C(4,6),D(4,2.5).



[Watch Video Solution](#)

2. Plot the following points on a graph sheet

.Verify if they lie on a line.

P(1,1),Q(2,2),R(3,3),S(4,4).



[Watch Video Solution](#)

3. Plot the following points on a graph sheet  
.Verify if they lie on a line.

K(2,3),L(5,3),M(5,5),N(2,5).



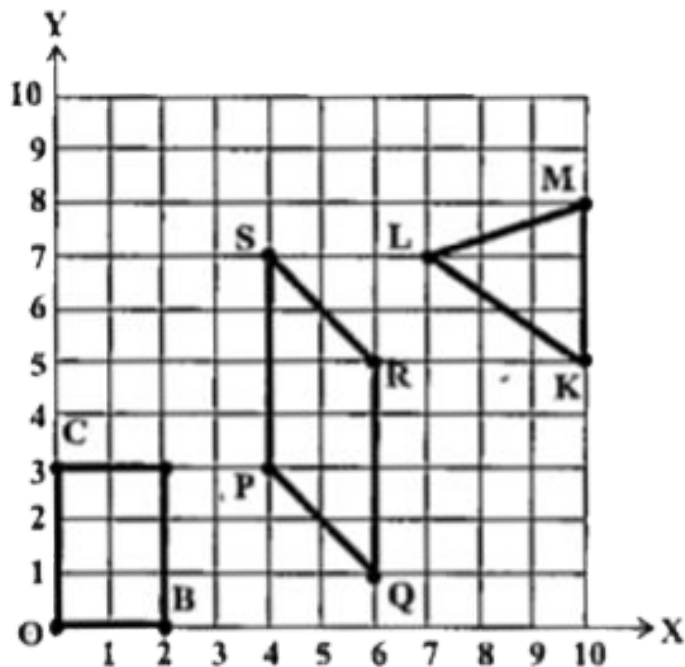
[Watch Video Solution](#)

4. Draw the line passing through(2,3) and  
(3,2).Find the co-ordinates of the points at  
which this line meets the x-axis and y-axis.



[Watch Video Solution](#)

5. Write the co-ordinates of the vertices of each of the these adjoini figures .



[Watch Video Solution](#)



6. State whether True or False. Correct that are false.

A point whose x-co-ordinate is zero and y-co-ordinate is non - zero will lie on the y - axis.



[Watch Video Solution](#)

7. State whether True or False. Correct that are false.

A point whose y-co-ordinate is zero and x-co-ordinate is 5 will lie on y-axis.





[Watch Video Solution](#)

8. State whether True or False. Correct that are false.

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



[Watch Video Solution](#)

### Exercise 15 3

1. Draw the graphs for the following tables of values , with suitable scales on the axes .

## Cost of apples

Number of apples	1	2	3	4	5
Cost (in ₹)	5	10	15	20	25



[Watch Video Solution](#)

2. Draw the graphs for the following tables of values , with suitable scales on the axes .

Distance travelled by a car .

Time (in hours)	6 am	7 am	8 am	9 am
Distance (in km)	40	80	120	160

(i) How much distance did the car cover during the period

7: 30 a .m. To 8 a.m.?

(ii) What was the time when the car had covered a distance of 100 km since it start ?



[Watch Video Solution](#)

### 3. Interest on deposits for a year

Deposit (in ₹)	1000	2000	3000	4000	5000
Simple Interest (in ₹)	80	160	240	320	400

(i) Does the graph pass through the origin ?

(ii) Use the graph to find the interest of Rs .  
2500 for a year .

(iii) To get an interest on Rs. 280 per year .  
How much money should be deposited ?



Watch Video Solution

4. Draw a graph for the following .

Side of square (in cm)	2	3	3.5	5	6
Perimeter (in cm)	8	12	14	20	24

Is it a linear graph ?



Watch Video Solution

5. Draw a graph for the following .

Side of square (in cm)	2	3	4	5	6
Area (in cm <sup>2</sup> )	4	9	16	25	36

Is it a linear graph ?



[Watch Video Solution](#)

## Additional Questions For Practice Objective Type Questions

1. Fill in the blanks .

The vertical line  $Y' OY$  in the co - ordinate plane is called \_.



[Watch Video Solution](#)

2. The point of intersection of axis is called

..... .



**Watch Video Solution**

3. The two axes divide the plane into 4 parts

called \_.



**Watch Video Solution**

4. The ordinate of a point on x - axis is \_.



[Watch Video Solution](#)

5. State whether True or False. Correct that are false.

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



[Watch Video Solution](#)

6. The coordinates of a point on the line  $y = x$  where perpendicular distance from the line  $3x + 4y = 12$  is units are







[Watch Video Solution](#)

7. The y- ordinate of a point is also called \_.



[Watch Video Solution](#)

8. State whether the following statements are true or false .

Minimum number of points required to draw a line graph is 1.



[Watch Video Solution](#)

**9.** Point  $(0,0)$  lies on both axes .



**Watch Video Solution**

**10.** Show that the line joining the origin to the point  $(2, 1, 1)$  is perpendicular to the line determined by the points  $(3, 5, -1), (4, 3, -1)$ .



**Watch Video Solution**

**11.** X- axis is a horizontal line .



[Watch Video Solution](#)

12. The point of intersection of axis is called

..... .



[Watch Video Solution](#)

13. Any point on y- axis has its y- ordinate zero .

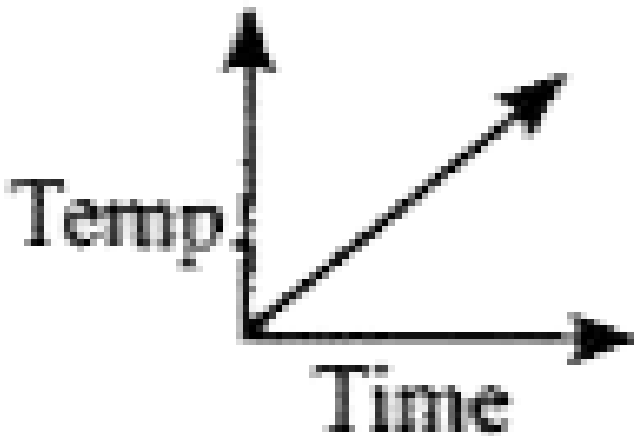


[Watch Video Solution](#)

14. In a cartesian plane x - axis and y- axis are together called \_\_\_\_\_ .

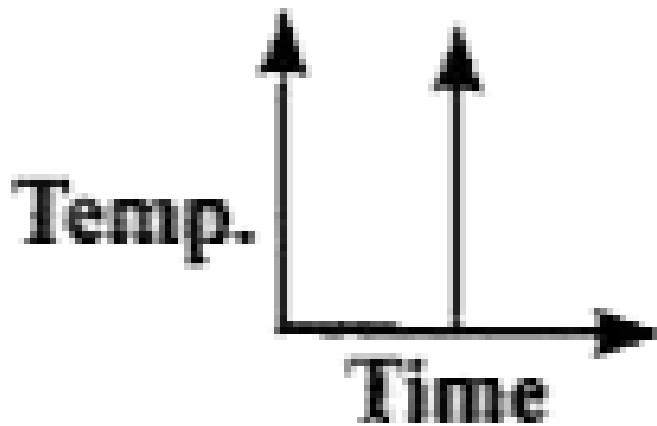
 [Watch Video Solution](#)

15. Which graph is incorrect



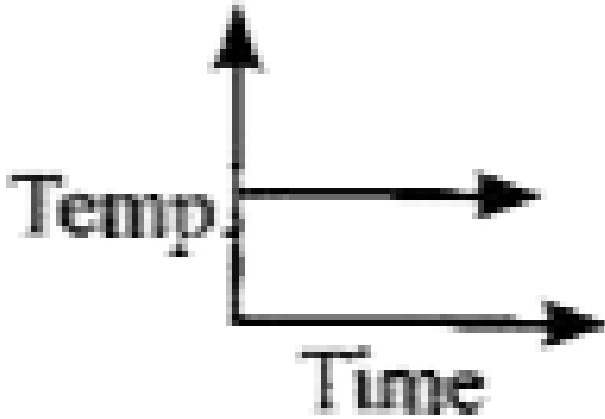
 [Watch Video Solution](#)

16. Which graph is incorrect



[Watch Video Solution](#)

17. Which graph is incorrect



[Watch Video Solution](#)

18. The horizontal axis called

(i) x - axis ,

(ii) y- axis

(iii) origin



[Watch Video Solution](#)

**19.** The ordinate of point  $(7,5)$  marked on the graph is

(i) 7

(ii) 5

(iii) none



[Watch Video Solution](#)

**20.** The co -ordinates of a point are  $(2,0)$  . It lies on

(i) y- axis

(ii) x - axis

(iii) at origin



**Watch Video Solution**

**21.** A point lies on y - axis if its

(i) x - coordinate is 0 (ii) y- coordinates is 0

(iii) both are zero



**Watch Video Solution**



## Additional Questions For Practice Short Answer Type Questions

1. Write the following points whose

abscissa is 4

ordinate is 0



[Watch Video Solution](#)

2. Write the following points whose

abscissa is 1

Ordinate is 5



[Watch Video Solution](#)

3. Write the following points whose

ordinate is 7

abscissa is 3



[Watch Video Solution](#)

4. What are the co - ordinaes of the

Origin



**Watch Video Solution**

5. A point on x - axis at a distance  $x$  from the origin .



**Watch Video Solution**

6. A point on y axis at a distance y from the origin.



[Watch Video Solution](#)

7. Plot the points P ( P,7,(Q(5,5)R(5,0) and S (1,0) on the cartesian plane and answer the following questions . Which points lie on x - axis



[Watch Video Solution](#)

8. Name of the line segment parallel to y- axis



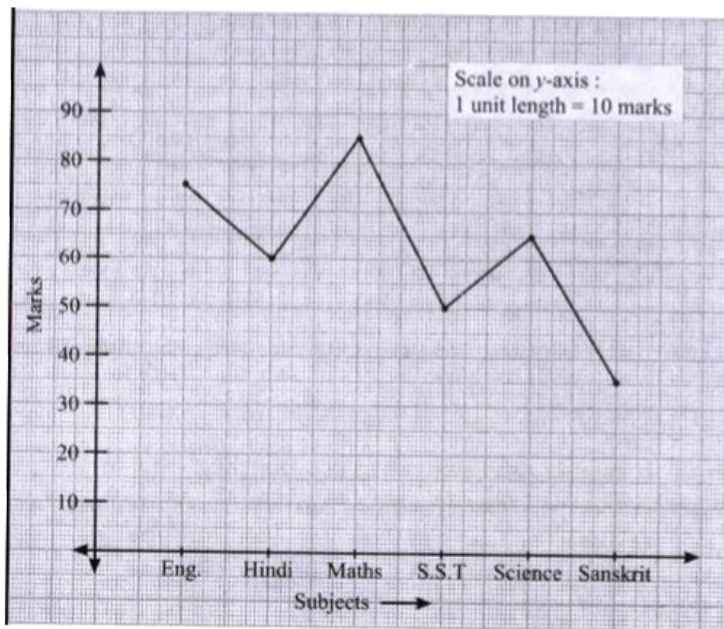
[Watch Video Solution](#)

9. Plot a rectangle which lies in the first quadrant , has origin as one vertex and is 6 units along x - axis and 4 units along y- axis .Write the co - ordinate at vertices of the rectangle .



[Watch Video Solution](#)

10. Marks obtained by a student in six different subjects is depicted by the adjacent graph .Study the graph and answer the following questions .

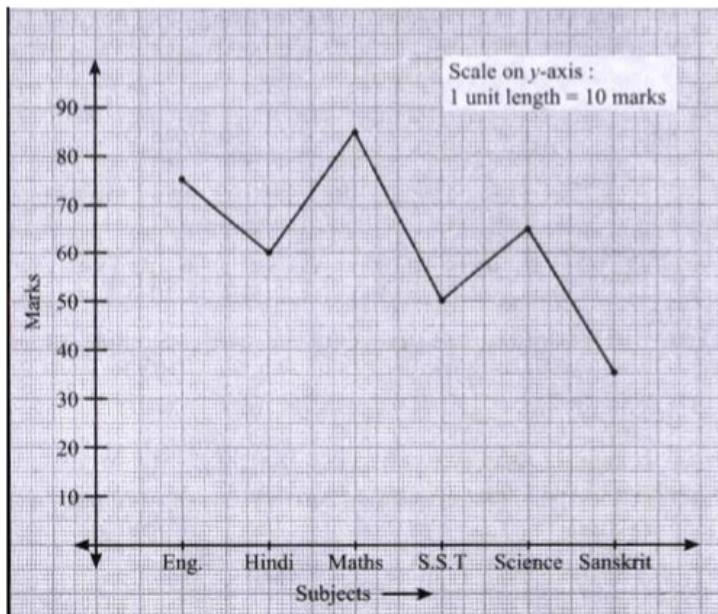


How many marks does the student scored in Maths .



Watch Video Solution

11. Marks obtained by a student in six different subjects is depicted by the adjacent graph .Study the graph and answer the following questions .



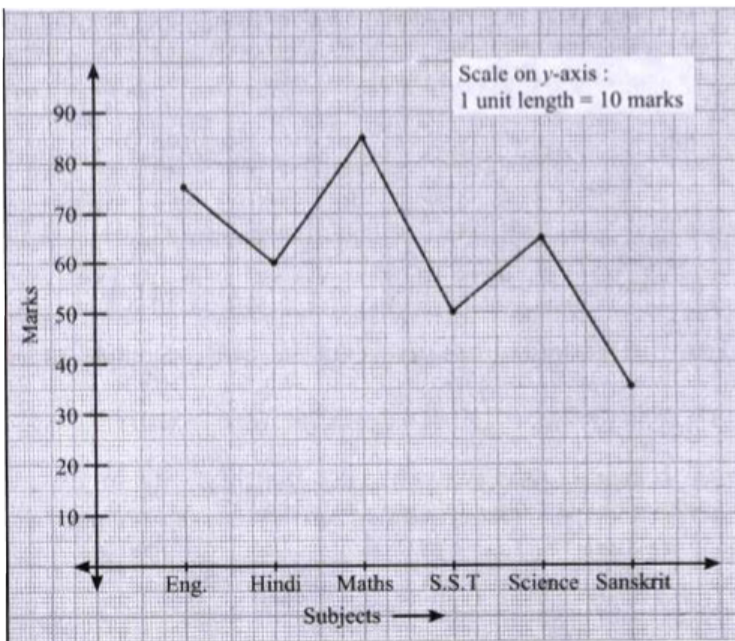
What are the highest and the lowest marks scored by the student and which subject ?



[Watch Video Solution](#)

**12.** Marks obtained by a student in six different subjects is depicted by the adjacent graph .Study the graph and answer the following questions .



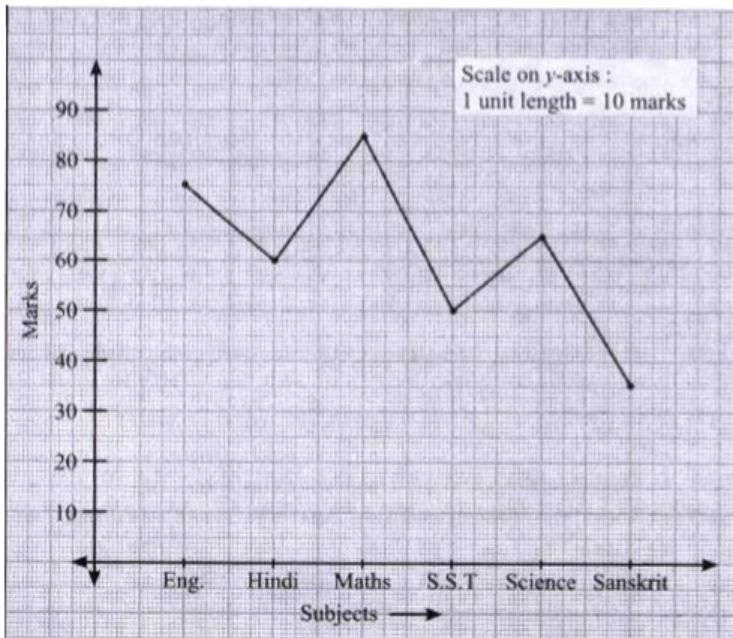


What is different between the highest and the lowest scores ?



[Watch Video Solution](#)

**13.** Marks obtained by a student in six different subjects is depicted by the adjacent graph .Study the graph and answer the following questions .

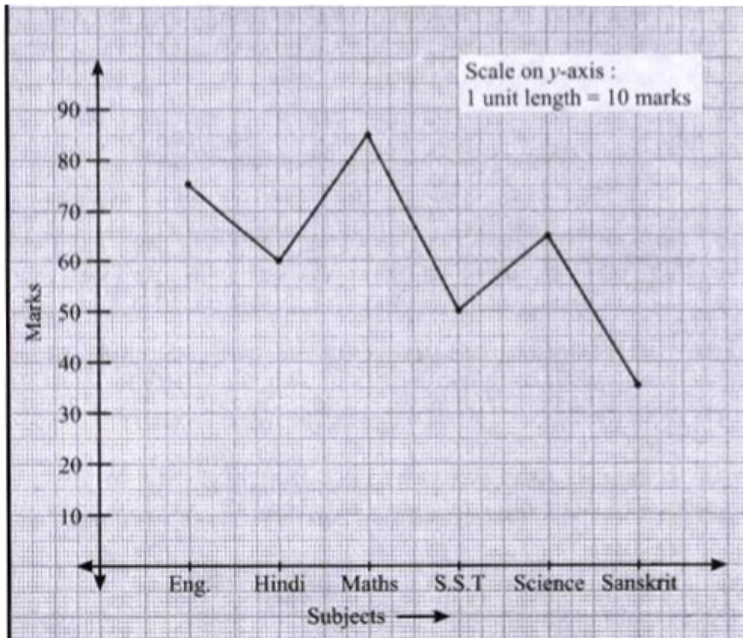


In how many subject did he score less than 50 marks ?



Watch Video Solution

14. Marks obtained by a student in six different subjects is depicted by the adjacent graph. Study the graph and answer the following questions.



Name the subjects in which he scored 75 marks or more ?



[Watch Video Solution](#)

## Additional Questions For Practice Long Answer Type Questions

1. The following table gives the information of the sales expected by a company and the actual sale during last 7 years . Draw the line graph of the information and answer the

questions give below :

Years	2012	2013	2014	2015	2016	2017	2018
Actual Sales (in lakhs)	6	12	10	12	6	4	10
Expected sales (in lakhs)	10	12	4	16	10	6	11

Were the actual sale and expected sale same during which year and how much was it ?



[Watch Video Solution](#)

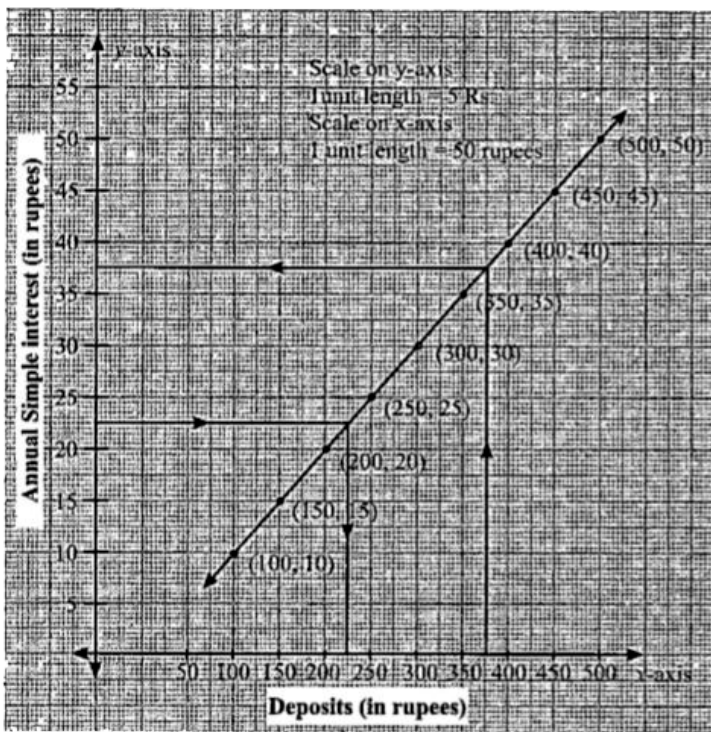
2. bank gives 10 % simple interest on deposits .Draw the graph to illustrate the relation between the simple interest and the sum deposited . From the graph drawn find it .

Investment made to get the annual simple interest of Rs . 22.50 .



**Watch Video Solution**

**3.** The simple interest obtained on investing Rs . 375 .



 [Watch Video Solution](#)

**Additional Questions For Practice Hots**

1. Manan drives the car at the uniform speed of 60 km /hr . Drawn a time distance

(a) Time taken by Manan to drive 150 km .

(b) The distance covered by Manan in  $1\frac{1}{2}$  hr .



[Watch Video Solution](#)

## Sample Paper For Practice

1. Fill in the blanks

To draw a line graph , the maximum number of



points required are \_\_\_\_\_



**Watch Video Solution**

2. The co - or dinates of a point which are 7 units away from x - axis and 4 units away from y - axis is \_\_\_\_\_ .



**Watch Video Solution**

3. The y- coordinate of a point is \_\_\_\_\_ distance from x - axis



[Watch Video Solution](#)

4. In a cartesian plane x - coordinate of a points is called \_\_\_\_\_ .



[Watch Video Solution](#)

5. Correct the following statements .

The x- coordinate of a point is called ordinate .



[Watch Video Solution](#)

6. Point  $(0,2)$  lies on x - axis .



[Watch Video Solution](#)

7. Graph joining  $(4,3), (4,7)$  ,  $(4,1)$  is perpendicular to y - axis



[Watch Video Solution](#)

8. X - axis is a vertical line .



[Watch Video Solution](#)

**9.** Answer the multiple choice questions .

The co -ordinate of a point on y- axis are of the form

(i)  $(y,0)$

(ii)  $(0,y)$

(iii)  $(x,y)$



**Watch Video Solution**

**10.** The point which lies on y - axis is

(i)  $(0,5)$

(ii) (2,0)

(iii) (0,0)



[Watch Video Solution](#)

**11.** Co - ordinates of the origin are

(i) (0,0)

(ii) (2,0)

(iii) (0,0)



[Watch Video Solution](#)

**12.** The abscissa of the point  $(2,5)$  marked on the graph is

(i) 5

(ii) 2

(iii) 0



**Watch Video Solution**

**13.** Which of the following points lie on axis /y-axis

(i)  $(0,2)$

(ii) (5,0)

(iii) (3,0)

(iv) (0,9)



[Watch Video Solution](#)

**14.** Name the axis on which the following points lie

(i) (0,9)



[Watch Video Solution](#)

**15.** Name the axis on which the following points lie

$(12,0)$



**Watch Video Solution**

**16.** Name the axis on which the following points lie

$(0,6)$



**Watch Video Solution**



17. Name the axis on which the following points lie

$(7,0)$



[Watch Video Solution](#)

18. Write the distances of these points from y-axis .

$(4,2)$



[Watch Video Solution](#)

**19.** Write the distances of these points from  $y$ -axis .

(1,5)



**Watch Video Solution**

**20.** Write the distances of these points from  $y$ -axis .

(0,7)



**Watch Video Solution**

21. Write the distances of these points from y-axis

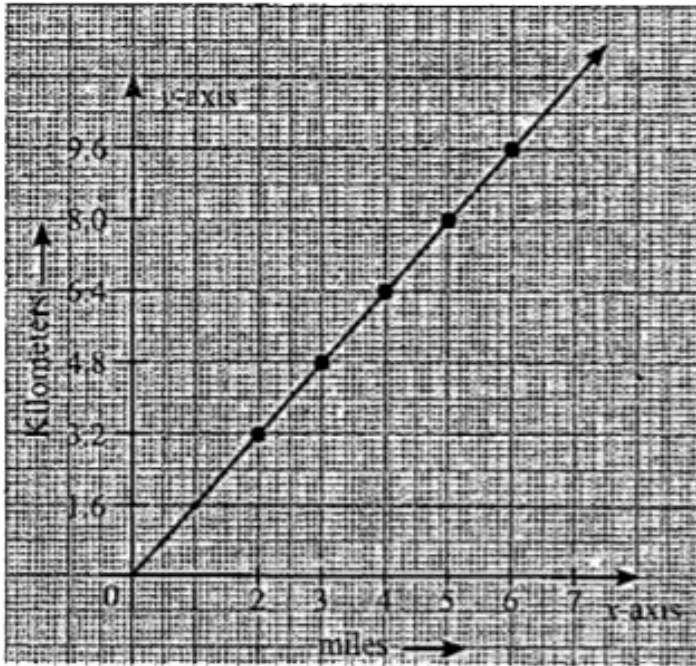
(9,0)



Watch Video Solution

22. Following is the conversion graph between kilometer and miles .The scale on x - axis represents unit length is equal to 2 miles and scale on y - axis represent 1 unit length is equal to 1.6 kilometers .Read the graph and

answer the question .

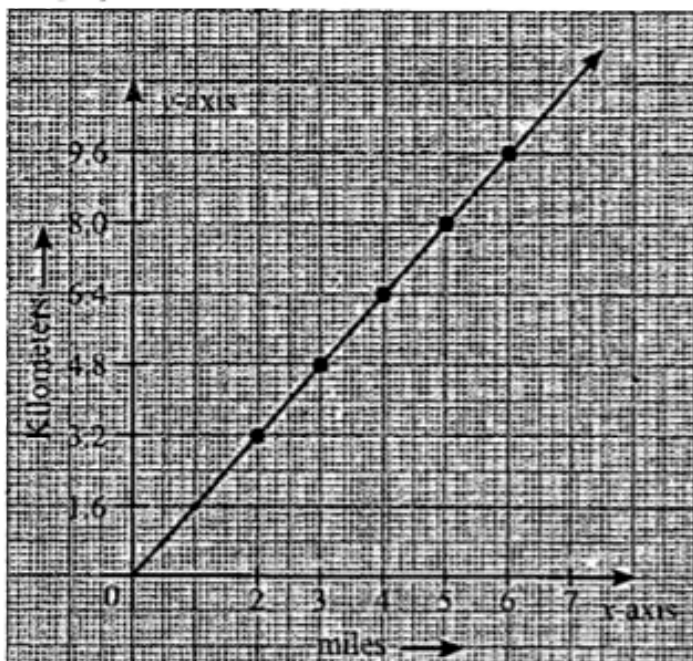


What is the scale taken on x-axis



[Watch Video Solution](#)

23. Following is the conversion graph between kilometer and miles .The scale on x - axis represents unit length is equal to 2 miles and scale on y - axis represent 1 unit length is equal to 1.6 kilometers .Read the graph and answer the question .

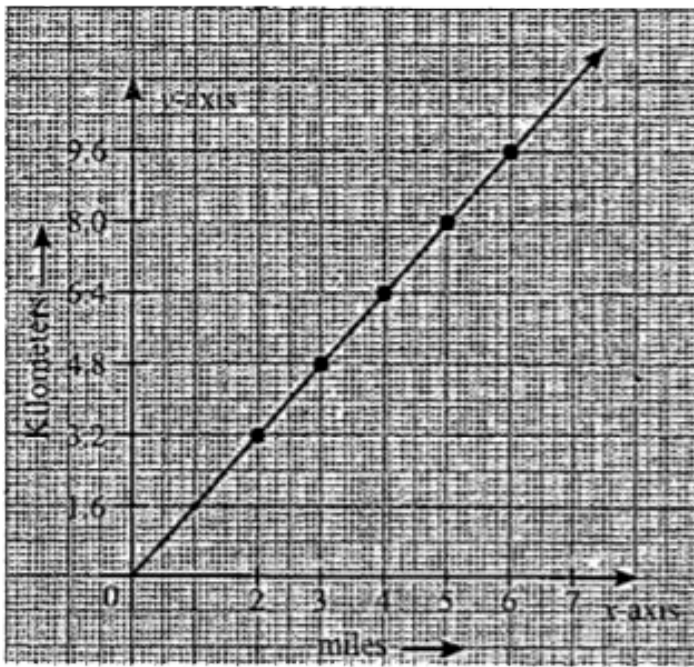


An athlete runs 6 miles . What is the distance in km .



**Watch Video Solution**

**24.** Following is the conversion graph between kilometer and miles .The scale on x - axis represents unit length is equal to 2 miles and scale on y - axis represent 1 unit length is equal to 1.6 kilometers .Read the graph and answer the question .



Ritas house is 4 - 8 km from school .Find the distance in miles .



[Watch Video Solution](#)

**25.** Can there be a time -temperature graph as follows ?Justify your answer .



**Watch Video Solution**

**26.** The lichens represent symbiotic relationship between



**Watch Video Solution**



27. Draw the line graph to show the maximum and minimum temperature of a city during 6 days of a week .

Days	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday
Max. Temp.	40	42.5	30	40	45	37.5
Min. Temp.	20	30	15	20	22.5	20



[Watch Video Solution](#)