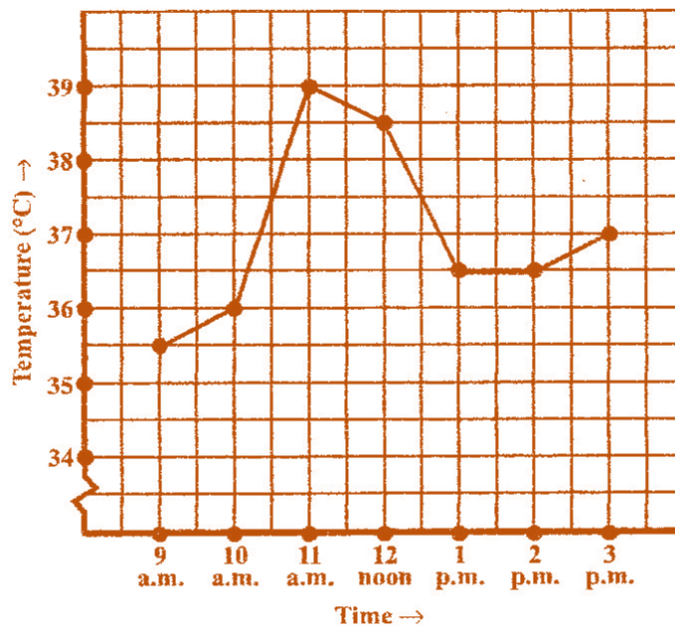


Exercise 15.1

Question 1:

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



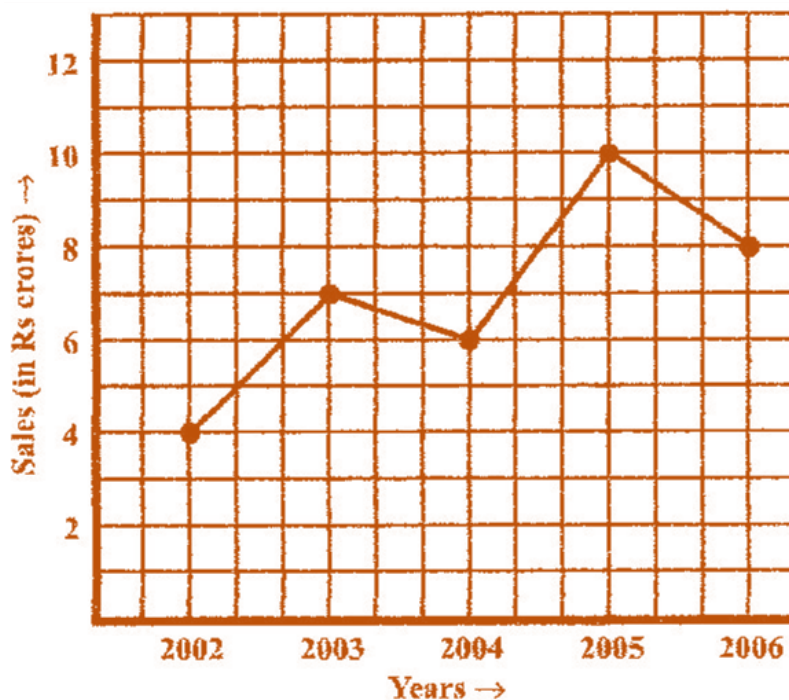
- (a) What was the patient's temperature at 1 p.m.?
- (b) When was the patient's temperature 38.5° C?
- (c) The patient's temperature was the same two times during the period given. What were these two times?
- (d) What was the temperature at 1.30 p.m.? How did you arrive at your answer?
- (e) During which periods did the patients' temperature showed an upward trend?

Answer 1:

- (a) The patient's temperature was 36.5° C at 1 p.m.
- (b) The patient's temperature was 38.5° C at 12 noon.
- (c) The patient's temperature was same at 1 p.m. and 2 p.m.
- (d) The temperature at 1.30 p.m. is 36.5° C. The point between 1 p.m. and 2 p.m., x -axis is equidistant from the two points showing 1 p.m. and 2 p.m. So it represents 1.30 p.m. Similarly the point on y -axis, between 36° C and 37° C will represent 36.5° C.
- (e) The patient's temperature showed an upward trend from 9 a.m. to 11 a.m.

Question 2:

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



- (a) What were the sales in (i) 2002 (ii) 2006?
- (b) What were the sales in (i) 2003 (ii) 2005?
- (c) Compute the difference between the sales in 2002 and 2006.
- (d) In which year was there the greatest difference between the sales as compared to its previous year?

Answer 2:

(a) The sales in:

- (i) 2002 was ₹ 4 crores and
- (ii) 2006 was ₹ 8 crores.

(b) The sales in:

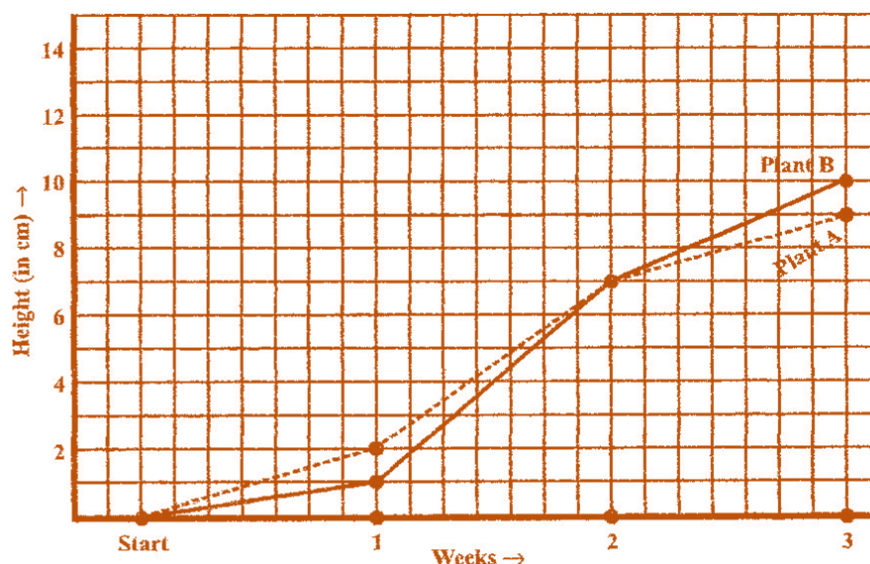
- (i) 2003 was ₹ 7 crores and
- (ii) 2005 was ₹ 10 crores.

(c) The difference of sales in 2002 and 2006 = ₹ 8 crores – ₹ 4 crores = ₹ 4 crores

(d) In the year 2005, there was the greatest difference between the sales as compared to its previous year, which is (₹ 10 crores – ₹ 6 crores) = ₹ 4 crores.

Question 3:

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.



- (a) How high was Plant A after (i) 2 weeks (ii) 3 weeks?
- (b) How high was Plant B after (i) 2 weeks (ii) 3 weeks?
- (c) How much did Plant A grow during the 3rd week?
- (d) How much did Plant B grow from the end of the 2nd week to the end of the 3rd week?
- (e) During which week did Plant A grow most?
- (f) During which week did Plant B grow least?
- (g) Were the two plants of the same height during any week shown here? Specify.

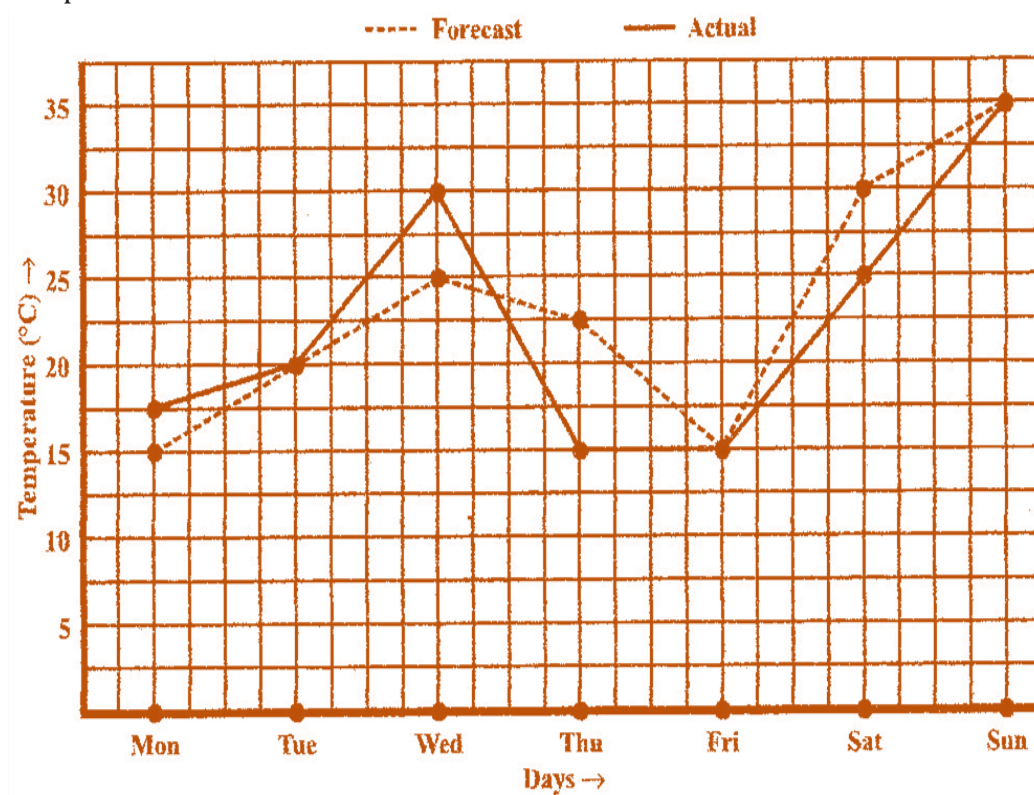
Answer 3:

- (a) (i) The plant A was 7 cm high after 2 weeks and
(ii) after 3 weeks it was 9 cm high.
- (b) (i) Plant B was also 7 cm high after 2 weeks and
(ii) after 3 weeks it was 10 cm high.
- (c) Plant A grew = $9\text{ cm} - 7\text{ cm} = 2\text{ cm}$ during 3rd week.
- (d) Plant B grew during end of the 2nd week to the end of the 3rd week = $10\text{ cm} - 7\text{ cm} = 3\text{ cm}$.
- (e) Plant A grew the highest during second week.
- (f) Plant B grew the least during first week.
- (g) At the end of the second week, plant A and B were of the same height.

Question 4:

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

- (a) On which days was the forecast temperature the same as the actual temperature?
- (b) What was the maximum forecast temperature during the week?
- (c) What was the minimum actual temperature during the week?
- (d) On which day did the actual temperature differ the most from the forecast temperature?



Answer 4:

- (a) On Tuesday, Friday and Sunday, the forecast temperature was same as the actual temperature.
- (b) The maximum forecast temperature was 35° C.
- (c) The minimum actual temperature was 15° C.
- (d) The actual temperature differed the most from the forecast temperature on Thursday.

Question 5:

Use the tables below to draw linear graphs.

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

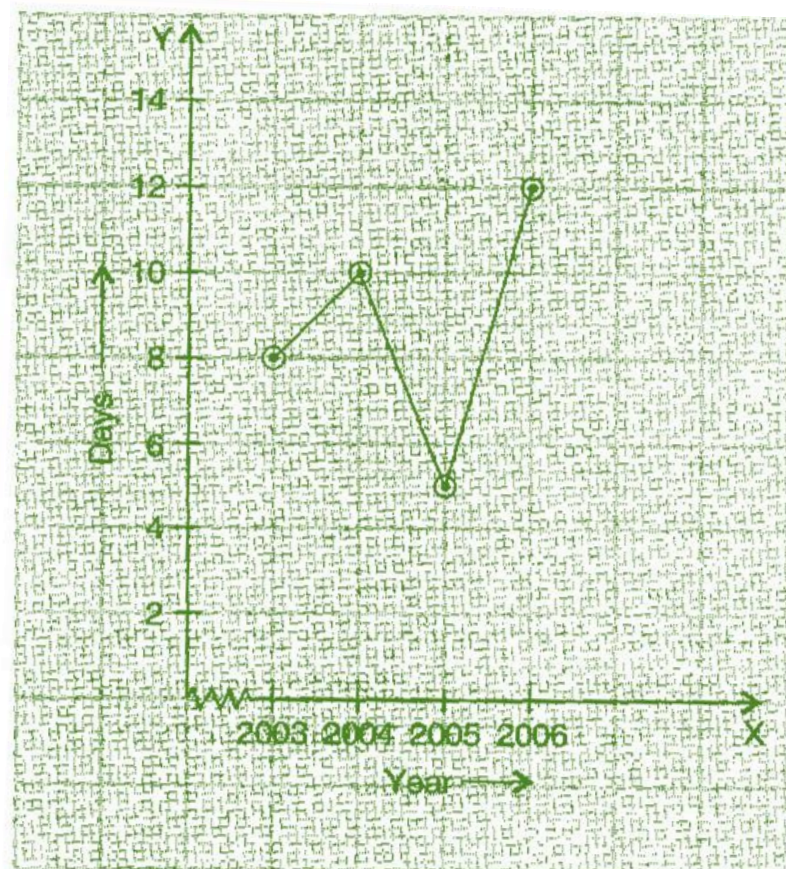
Year	2003	2004	2005	2006
Days	8	10	5	12

(b) Population (in thousands) of men and women in a village in different years.

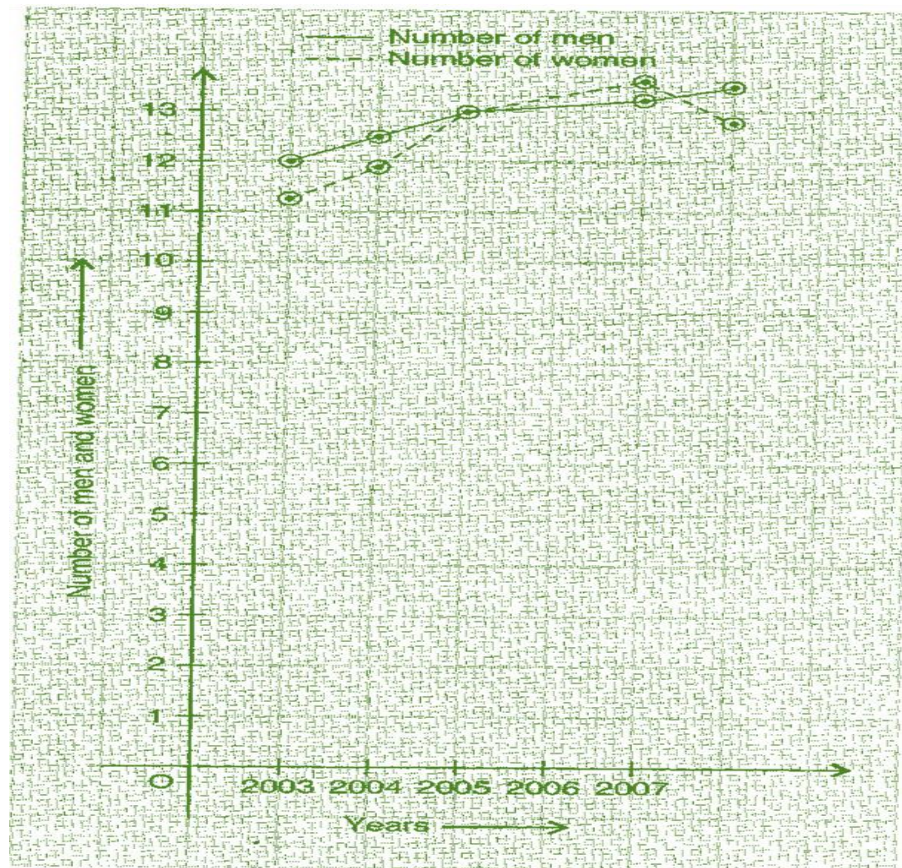
Year	2003	2004	2005	2006	2007
No. of Men	12	12.5	13	13.2	13.5
No. of Women	11.3	11.9	13	13.6	12.8

Answer 5:

(a)

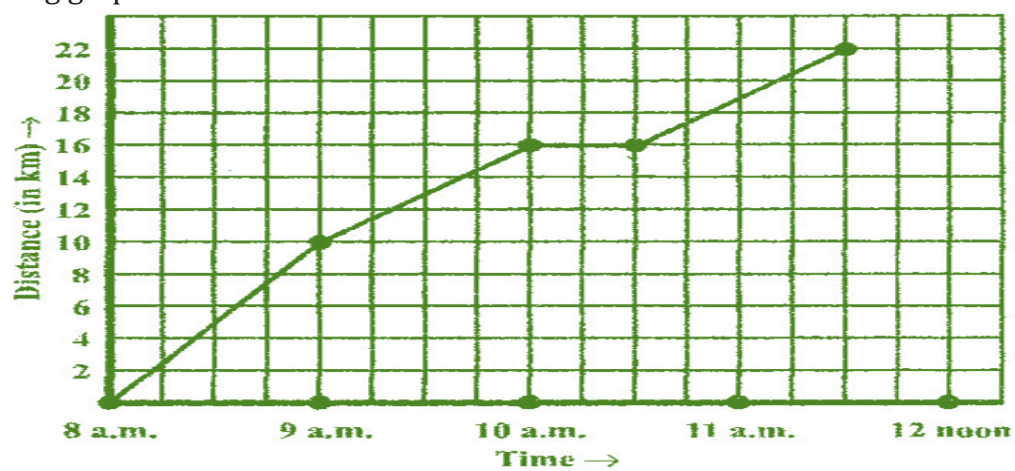


(b)



Question 6:

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.



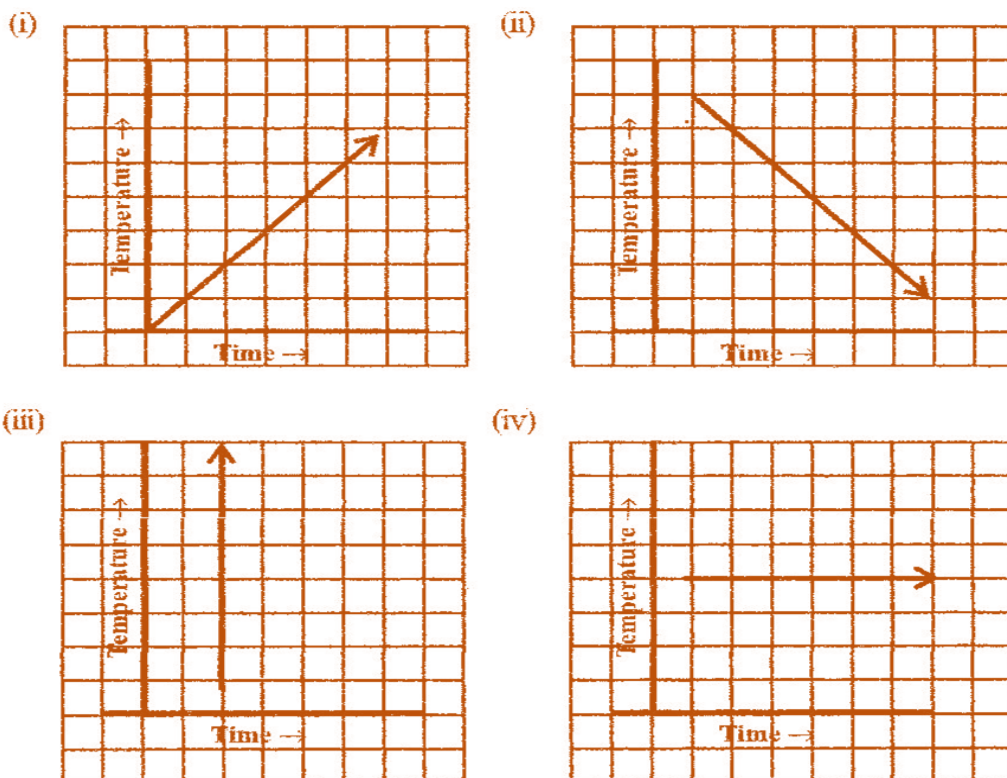
- (a) What is the scale taken for the time axis?
- (b) How much time did the person take for the travel?
- (c) How far is the place of the merchant from the town?
- (d) Did the person stop on his way? Explain.
- (e) During which period did he ride fastest?

Answer 6:

- (a) 4 units = 1 hour.
- (b) The person took $3\frac{1}{2}$ hours for the travel.
- (c) It was 22 km far from the town.
- (d) Yes, this has been indicated by the horizontal part of the graph. He stayed from 10 am to 10.30 am.
- (e) He rode the fastest between 8 am and 9 am.

Question 7:

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



Answer 7:

- (i) It is showing the increase in temperature.
- (ii) It is showing the decrease in temperature.
- (iii) The graph figure (iii) is not possible since temperature is increasing very rapidly which is not possible.
- (iv) It is showing constant temperature.

Exercise 15.2

Question 1:

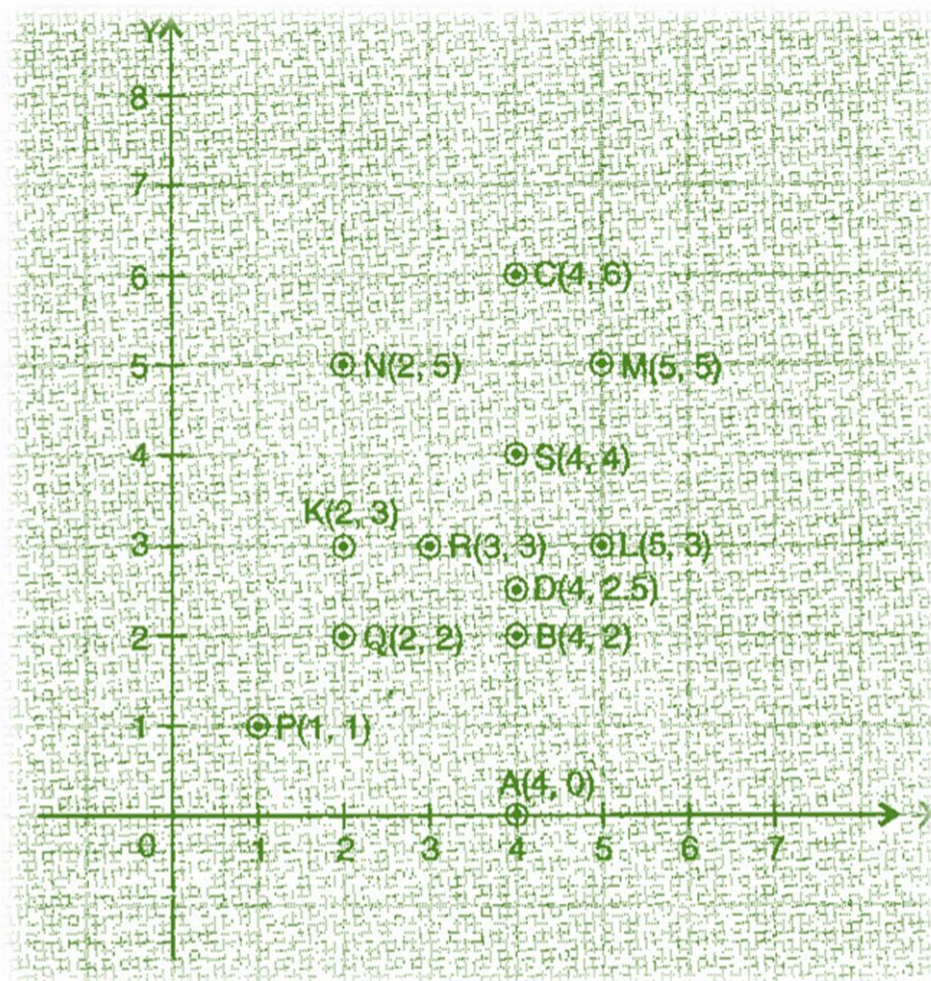
Plot the following points on a graph sheet. Verify if they lie on a line

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

(b) $P(1, 1)$, $Q(2, 2)$, $R(3, 3)$, $S(4, 4)$

(c) $K(2, 3)$, $L(5, 3)$, $M(5, 5)$, $N(2, 5)$

Answer 1:



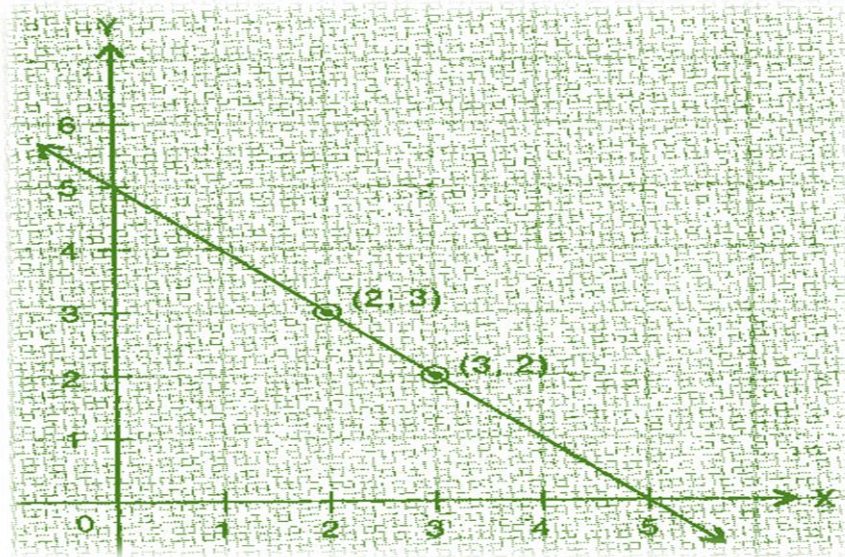
(a) All points A, B, C and D lie on a vertical line.

(b) P, Q, R and S points also make a line. It verifies that these points lie on a line.

(c) These points do not lie in a straight line.

Question 2:

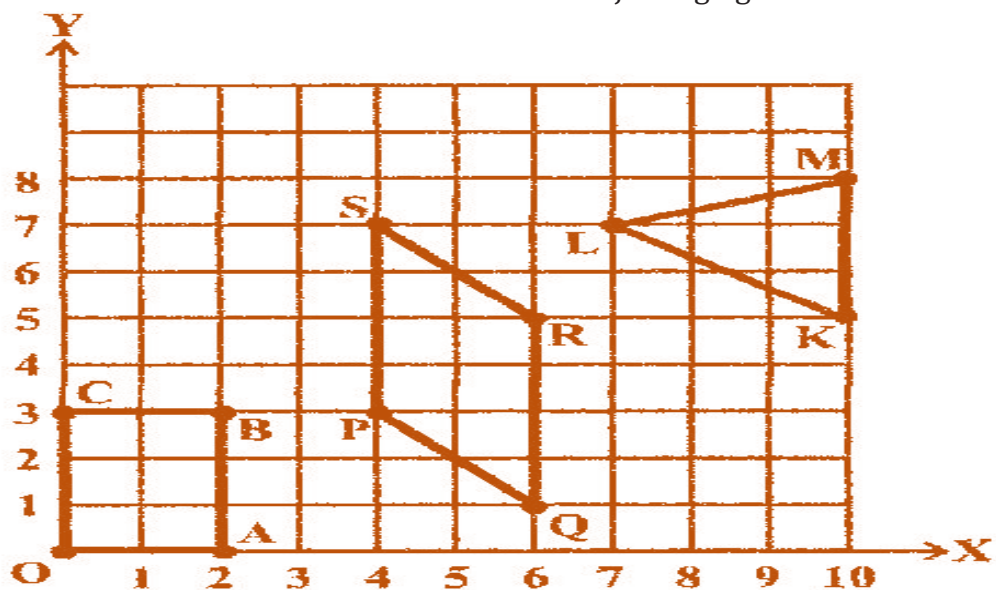
Draw the line passing through $(2, 3)$ and $(3, 2)$. Find the coordinates of the points at which this line meets the x -axis and y -axis.

Answer 2:

The coordinates of the points at which this line meets the x -axis at $(5, 0)$ and y -axis at $(0, 5)$.

Question 3:

Write the coordinates of the vertices of each of these adjoining figures.



Answer 3:

Vertices of figure OABC

O (0, 0), A (2, 0), B (2, 3) and C (0, 3)

Vertices of figure PQRS

P (4, 3), Q (6, 1), R (6, 5) and S (4, 7)

Vertices of figure LMK

L (7, 7), M (10, 8) and K (10, 5)

Question 4:

State whether True or False. Correct that are false.

(i) A point whose x coordinate is zero and y-coordinate is non-zero will lie on the y-axis.

(ii) A point whose y coordinate is zero and x-coordinate is 5 will lie on y-axis.

(iii) The coordinates of the origin are (0, 0).

Answer 4:

(i) True

(ii) False, it will lie on x – axis.

(iii) True

Exercise 15.3

Question 1:

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

(a) Cost of apples

No. of apples	1	2	3	4	5
Cost (in ₹)	5	10	15	20	25

(b) Distance travelled by a car

Time (in hours)	6 a.m.	7 a.m.	8 a.m.	9 a.m.
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's start?

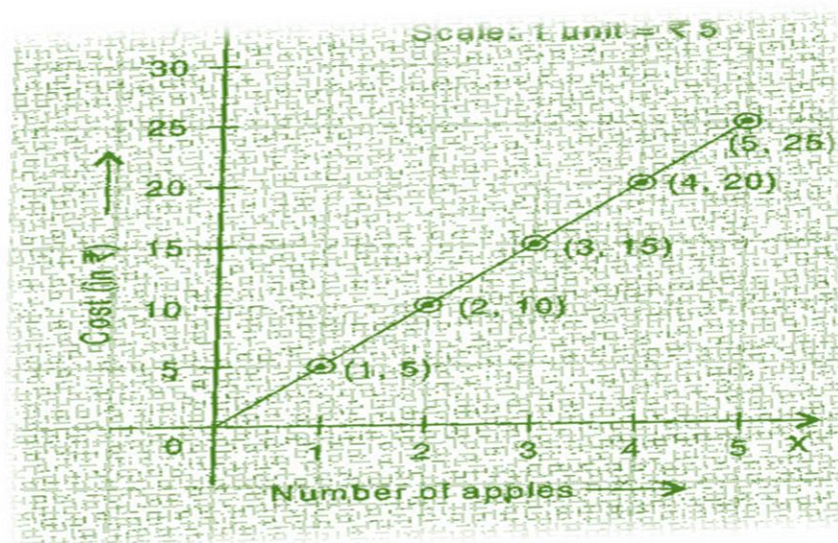
(c) Interest on deposits for a year.

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

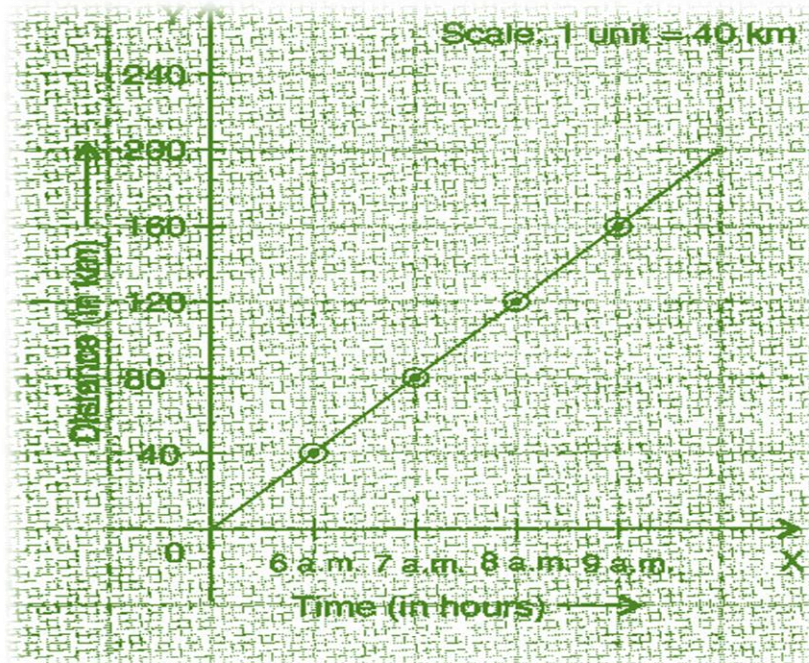
- (i) Does the graph pass through the origin?
(ii) Use the graph to find the interest on ₹ 2500 for a year.
(iii) To get an interest of ₹ 280 per year, how much money should be deposited?

Answer 1:

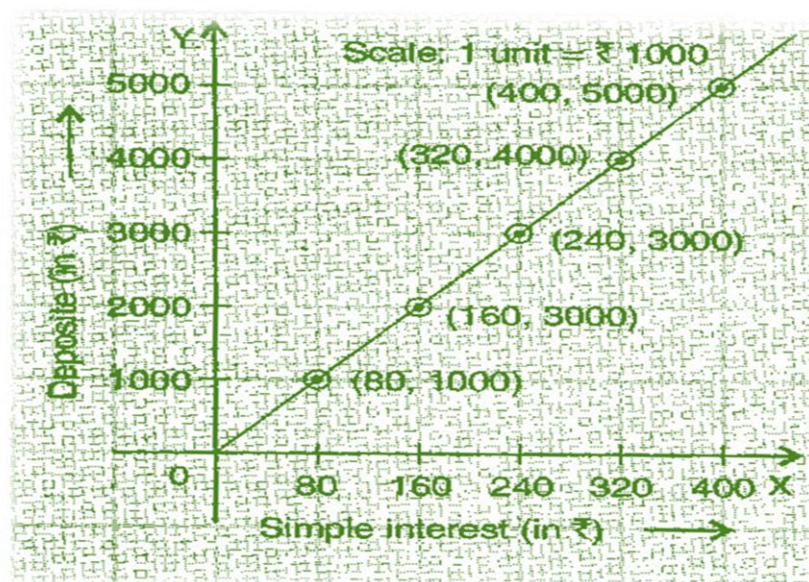
(a)



- (b) (i) The car covered 20 km distance.
(ii) It was 7.30 am, when it covered 100 km distance.



- (c) (i) Yes, the graph passes through the origin.
(ii) Interest on ₹ 2500 is ₹ 200 for a year.
(iii) ₹3500 should be deposited for interest of ₹ 280.



Question 2:

Draw a graph for the following.

(i)

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

Is it a linear graph?

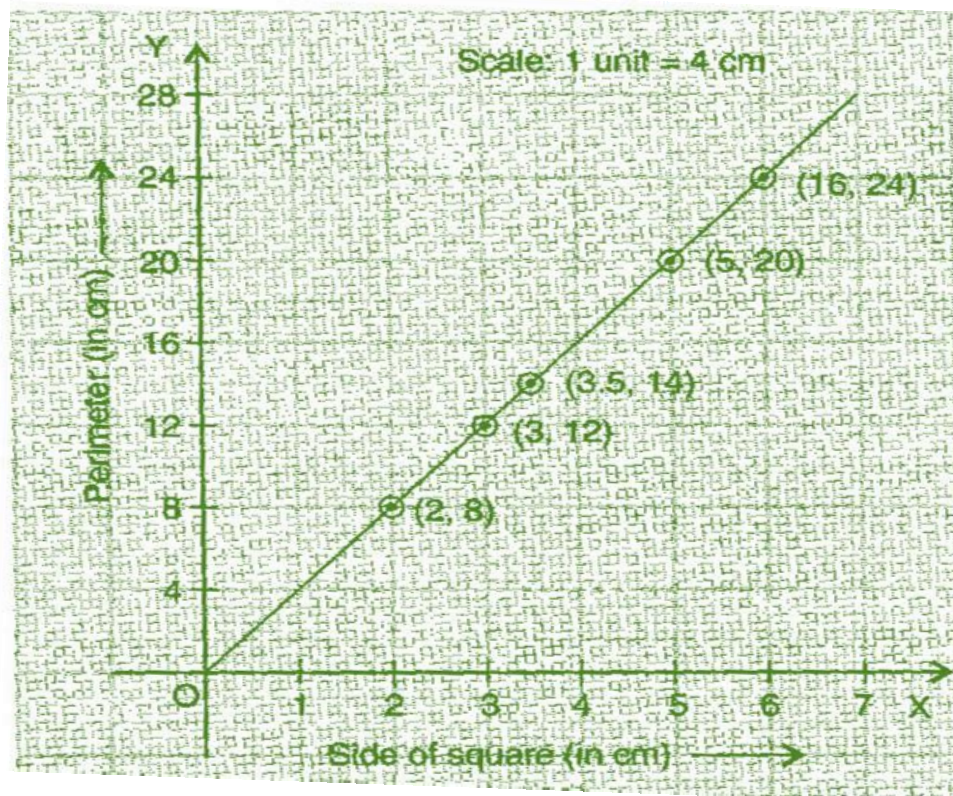
(ii)

Side of Square(in cm)	2	3	4	5	6
Area (in cm^2)	4	9	16	25	36

Is it a linear graph?

Answer 2:

(i) Yes, it is a linear graph.



(ii) No, it is not a linear graph because the graph does not provide a straight line.

