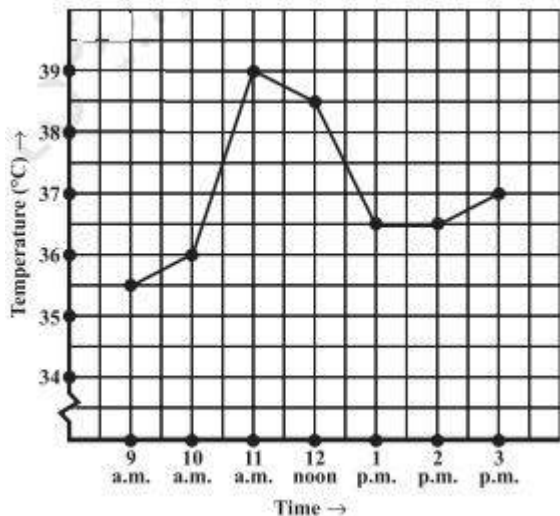


**EXERCISE 15.1**

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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 patient’s temperature show an upward trend?

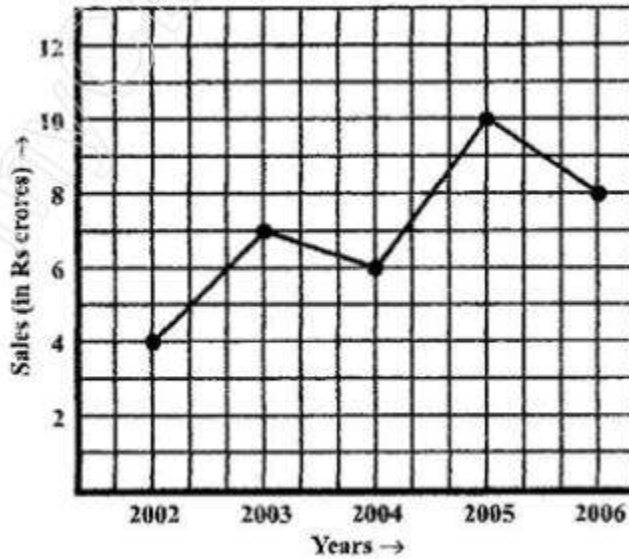
**Solution:**

- (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 2p.m
- (d) The temperature at 1.30 p.m. is 36.5°C.

The point between 1p.m.and 2 p.m., the 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 the y-axis, between 36°C and 37°C, represents 36.5°C.

- (e) The patient’s temperature showed an upward trend from 9 a.m. to 11 a.m. and from 2 p.m. to 3 p.m.

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 the previous year?

**Solution:**

(a) The sales in

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

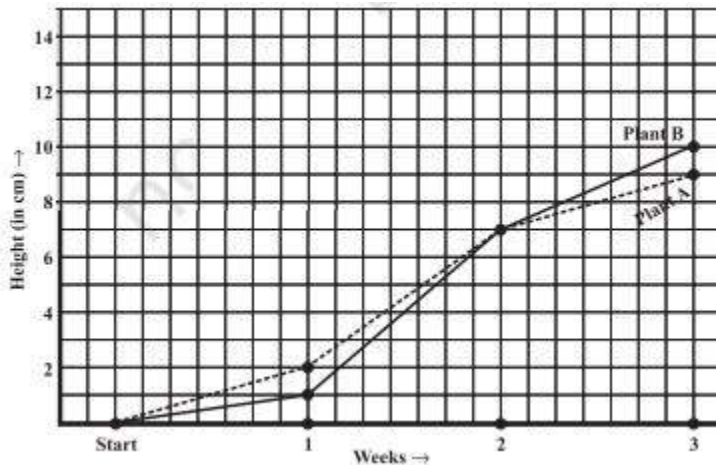
(b) The sales in

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

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

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

**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.**



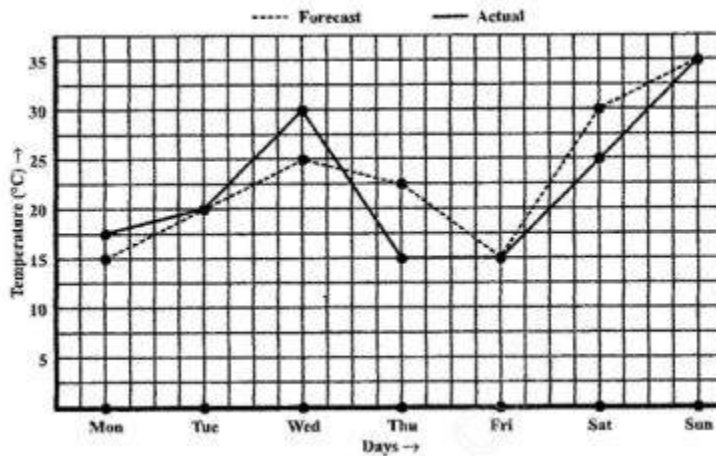
- How high was Plant A after (i) 2 weeks (ii) 3 weeks?
- How high was Plant B after (i) 2 weeks (ii) 3 weeks?
- How much did Plant A grow during the 3<sup>rd</sup> week?
- How much did Plant B grow from the end of the 2<sup>nd</sup> week to the end of the 3<sup>rd</sup> week?
- During which week did Plant A grow most?
- During which week did Plant B grow least?
- Were the two plants of the same height during any week shown here? Specify.

**Solution:**

- Plant A was 7 cm high after 2 weeks.
  - After 3 weeks, it was 9 cm high.
- Plant B was also 7 cm high after 2 weeks.
  - After 3 weeks, it was 10 cm high.
- Plant A grew =  $9 \text{ cm} - 7 \text{ cm} = 2 \text{ cm}$  during 3<sup>rd</sup> week
- Plant B grew from end of the 2<sup>nd</sup> week to the end of the 3<sup>rd</sup> week =  $10 \text{ cm} - 7 \text{ cm} = 3 \text{ cm}$
- Plant A grew the highest during the second week.
- Plant B grew the least during first week.
- Yes. At the end of the second week, plants A and B were of the same height, which is 7 cm.

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

- On which days was the forecast temperature the same as the actual temperature?
- What was the maximum forecast temperature during the week?
- What was the minimum actual temperature during the week?
- On which day did the actual temperature differ the most from the forecast temperature?



**Solution:**

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

5. Use the tables below to draw linear graphs

- The number of days a hillside city received snow in different years.

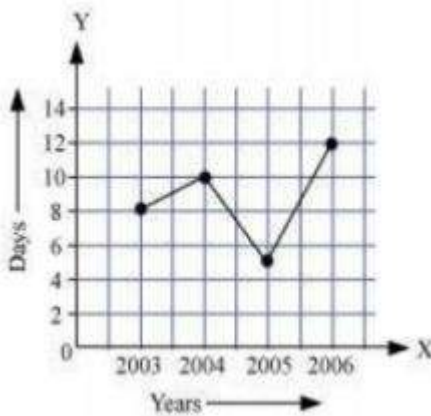
Year	2003	2004	2005	2006
Days	8	10	5	12

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

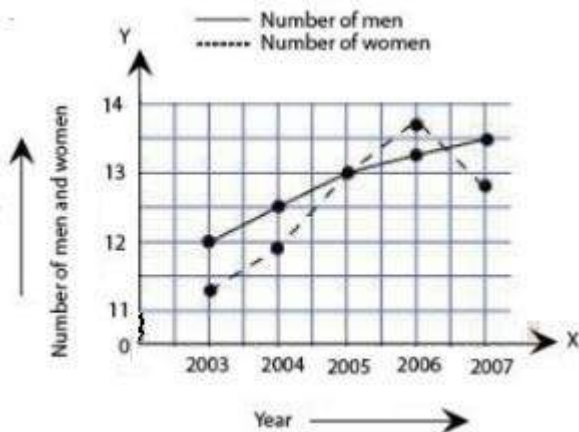
Year	2003	2004	2005	2006	2007
No. of Men	12	12.5	13	13.2	13.5
No. of Women	11.3	11.9	13	13.6	12.8

**Solution:**

(a) Consider “Years” along the x-axis and “Days” along the y-axis. Using the given information, the linear graph will look like this:

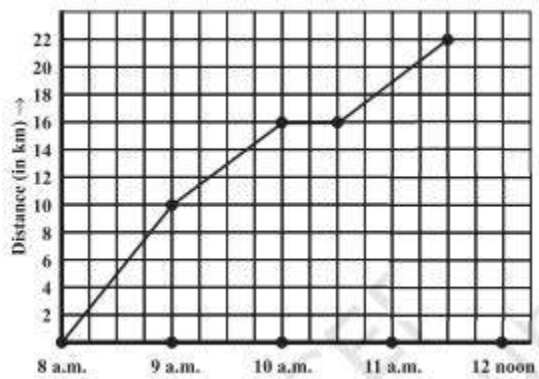


(b) Consider “Years” along the x-axis and “No. of Men and No. of Women” along the y-axis (2 graphs). Using the given information, the linear graph will look like this:



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

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

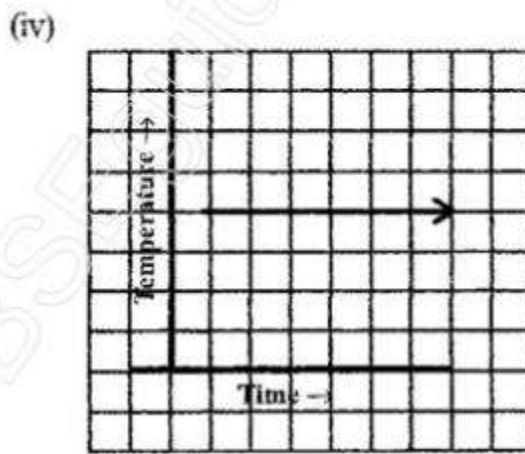
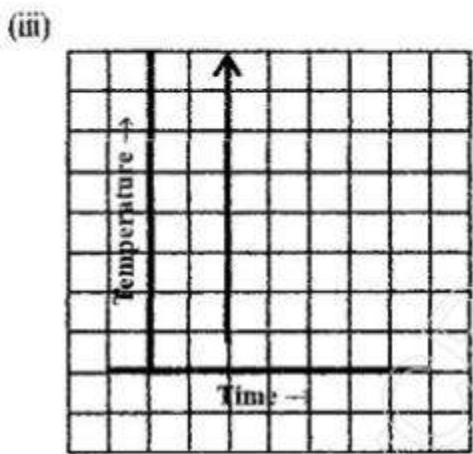
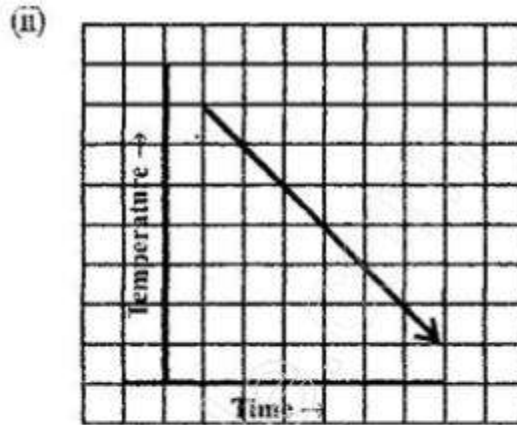
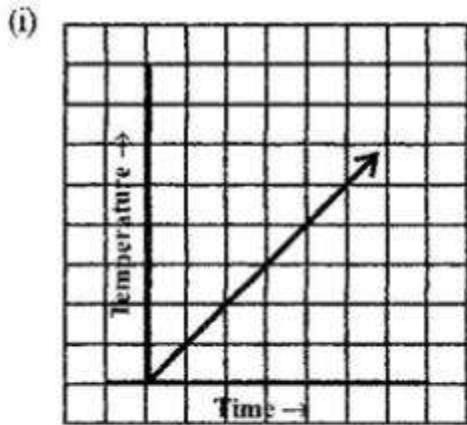


**Solution:**

- (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 a.m. to 10.30 a.m.
- (e) He rides the fastest between 8 a.m. and 9 a.m.

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





**Solution:**

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