NCERT SOLUTIONS CLASS-8 MATHS
CHAPTER-15 EXERCISE-15.1

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Q1) The graph given below shows the temperature of a patient observed every hour.

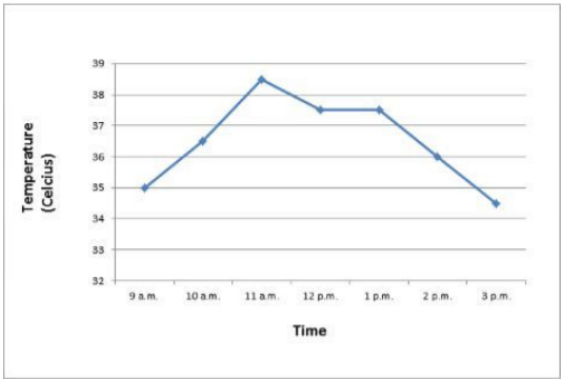
(a) What was the temperature of the patient at 2 pm?

(b) When was the temperature of the patient 36.5°?

(c) The temperature of the patient was same two times during the given period. What were these two times?

(d) What was the temperature at 12.30 p.m.? How did you come to know it?

(e) During which time did the temperature of the patient show a rising trend?



Ans.)

(a) The temperature of the patient was 36° C at 2 p.m.

(b) The temperature of the patient was 36.5° C at 10 a.m.

The temperature of the patient was the same at 12 p.m. and 1 p.m.

(d) The temperature at 12.30 p.m. is 37.5° C. The point between 12 p.m. and 1 p.m., x – axis is equidistant from the two points showing 12 p.m. and 1 p.m. So it represents 12.30 p.m. Similarly the point on y -axis, between 37° C and 38° C will represent 37.5° C.

(e) The temperature of the patient showed a rising trend from 9 a.m. to 11 a.m.

Q2) The graph given below shows annual sales data for a car manufacturing company.

(a) Give the number of sales in the following years:

(i) 2012

(ii) 2014

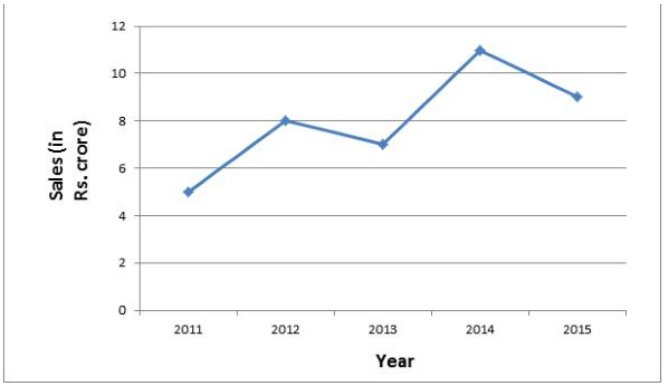
(b) Give the number of sales in the following years:

(i) 2011

(ii) 2015

What is the difference between the number of sales done in the year 2012 and 2015?

(d) In which year was the difference greatest in the numbers of sales compared to its previous year?



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(2011- 5, 2012-8, 2013-7, 2014-11, 2015-9)

Ans.)

(a) The numbers of sales:

(i) The sales were Rs. 8 crores, in 2012.

(ii) The sales were Rs. 11 crores, in 2014.

(b) The numbers of sales:

(i) The sales were Rs. 5 crores, in 2011.

(ii) The sales were Rs. 9 crores, in 2015.

I The sales were Rs. 8 crores, in 2012 and the sales were Rs. 9 crores, in 2015.

Therefore, the difference between the sales in 2012 and 2015 = Rs. (9 – 8) crores

= 1 crore

(d) The difference between the sales in 2015 and 2014 = Rs. (11 – 9) crores

= Rs. 2 crores

The difference between the sales in 2014 and 2013 = Rs. (11 – 7) crores

= Rs. 4 crores

The difference between the sales in 2013 and 2012 = Rs. (8 – 7) crores

= Rs. 1 crore

The difference between the sales in 2012 and 2011 = Rs. (8 – 5) crores

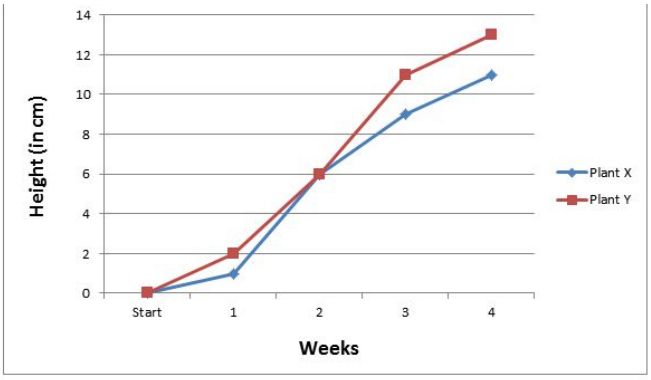
= Rs. 3 crores

Therefore, the difference is greatest in the year 2014 as compared to the year 2013.

Q3) In Botany, for an experiment, two different plants, plant X and plant Y were grown under similar laboratory conditions. The heights of the plants were measured at the end of each week for 4 weeks. The graph given below shows the result of the experiment.

(X — Start – 0,1 week -1cm, 2 week- 6 cm, 3 week – 9 cm, 4 week- 11cm)

(Y —Start – 0, 1 week -2cm, 2 week- 6 cm, 3 week – 11 cm, 4 week- 13cm)



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Answer the following questions using information given in the graph:

(a) How high was Plant X?

(i) After 2 weeks

(ii) After 3 weeks

(b) How high was Plant Y?

(i) After 2 weeks

(ii) After 3 weeks

During the 4^{th} week, how much did Plant X grow?

(d) During the 3^{rd} week and 4^{th} week, how much did Plant Y grow?

(e) In which week did Plant X grow maximum?

(f) In which week did Plant Y grow least?

(g) Specify the week during which both the two plants showed the same height.

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Ans.)

(a) The height of Plant X:

(i) The height of Plant Y was 6 cm after 2 weeks

(ii) The height of Plant Y was 9 cm after 3 weeks.

(b) The height of Plant Y:

(i) The height of Plant X was 6 cm after 2 weeks

(ii) The height of Plant X was 11 cm after 3 weeks.

I In 4^{th} week Plant X grew = 11 cm – 9 cm

= 2 cm.

(d) In 3^{rd} week Plant Y grew = 11 cm – 6 cm

= 5 cm

In 4^{th} week Plant Y grew = 13 cm – 11 cm

= 2 cm

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(e) Plant X

In 1st week Plant X grew = 1 cm – 0 cm

= 1 cm

In 2nd week Plant X grew = 5 cm – 1 cm

= 4 cm

In 3rd week Plant X grew = 9 cm – 6 cm

= 3 cm

In 4th week Plant X grew = 11 cm – 9 cm

= 2 cm

Therefore, Plant X grew maximum in 2nd week.

(f) Plant Y

In 1st week Plant Y grew = 2 cm – 0 cm

= 2 cm

In 2nd week Plant Y grew = 6 cm – 2 cm

= 4 cm

In 3rd week Plant Y grew = 11 cm – 6 cm

= 5 cm

In 4th week Plant Y grew = 13 cm – 9 cm

= 2 cm

Therefore, Plant Y grew maximum in 3rd week.

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(g) Plant X and Y were of the same height at the end of the week 2.

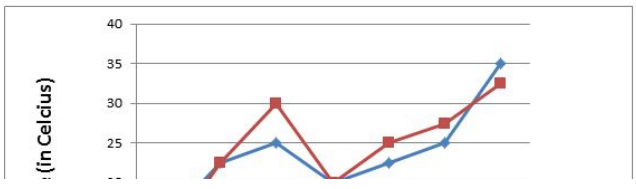
Q4) The graph given below shows the temperature forecast and the actual temperature for each day of a week.

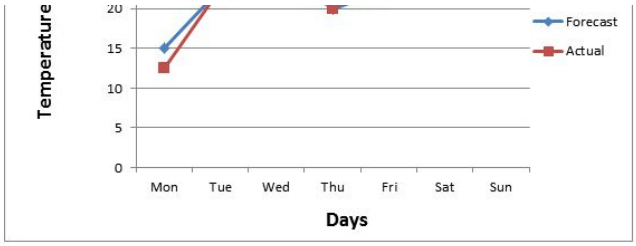
(a) Give the days when the actual temperature was same as the forecast temperature.

(b) What was the minimum forecast temperature during the week?

What was the maximum actual temperature during the week?

(d) On which day was there maximum difference between the actual temperature and the forecast temperature?





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Ans.)

(a) The actual temperature was same as the forecast temperature on Tuesday and Thursday.

(b) The minimum forecast temperature was 15° C.

I The maximum actual temperature was 32.5° C.

(d) The maximum difference between the actual temperature and the forecast temperature was on Wednesday which was 5° C.

Q5) By the use of tables given below, draw linear graphs.

(a) In the table below, the number of days when a hill station received snow in different years

Year	*2003*	*2004*	*2005*	*2006*
Days	*8*	*10*	*5*	*12*

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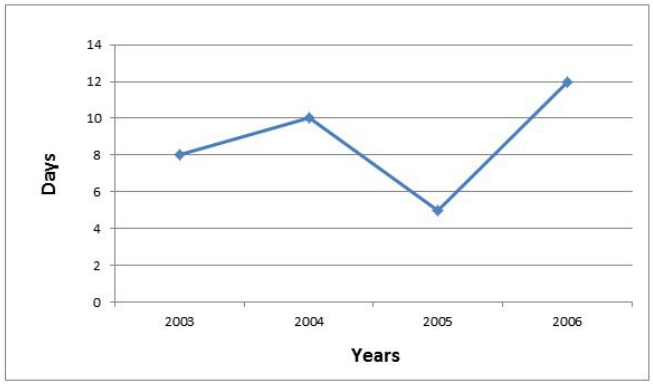
(b) For the different numbers of years, the population (in thousands) of men and women is given below.

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*

Ans.)

(a) Take the years on x-axis and the number of days on y-axis and taking scale as 1 unit = 2 days on y-axis and 2 unit = 1 year on x-axis, the linear graph of the given information can be drawn as follows.



(b) Taking the years on x-axis and population on y-axis and scale as 1 unit =0.5 thousand on y-axis and 2 unit = 1 year on x-axis, the linear graph of the given information can be drawn as follows.

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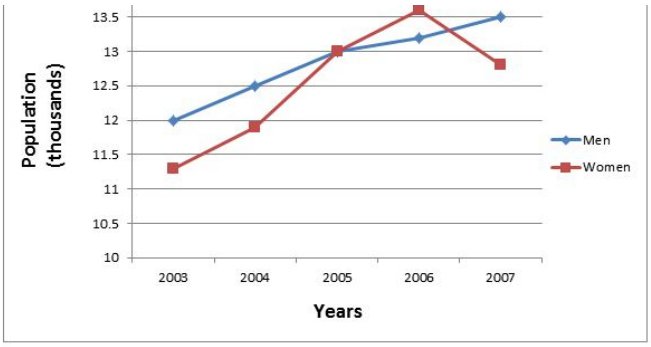
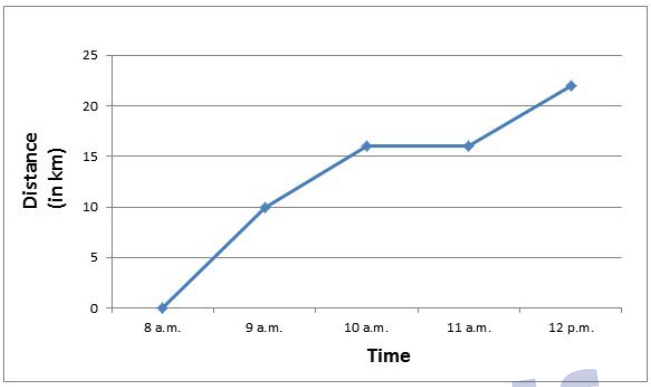


Q6) A postman cycles from the city to a neighboring village to deliver a package to a grocery dealer. His distance from the city at different times is shown in the following graph.



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(a) Find out the scale taken for the time axis.

(b) Find out the total time that the postman took to travel.

(c) Find the distance between the place of grocery dealer to the city.

(d) Did the postman stop on the way when he was travelling? Explain.

(e) Tell about the period during which he traveled the fastest.

Ans.)

(a) The scale taken for the time axis is 4 units = 1 hour

(b) The postman travelled during the time period 8 am – 11:30 am.

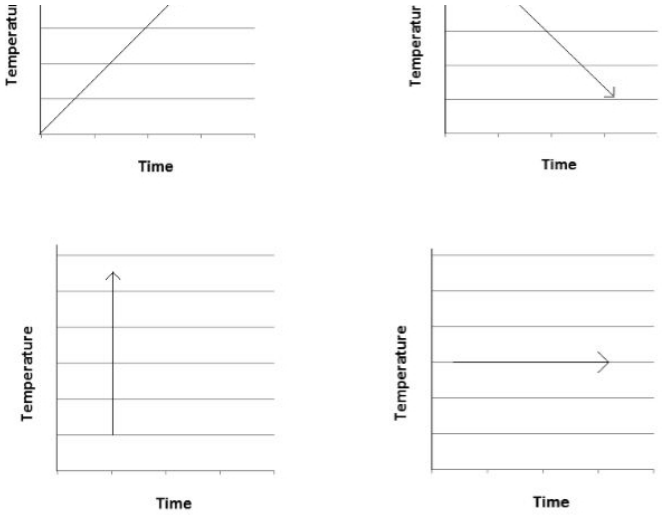
Therefore, the postman took $3\frac{1}{2}$ hours to travel

(c) The grocery dealer is 22km far from the city.

(d) Yes, the postman stopped on his way from 10am to 10:30am. This description is indicated by the horizontal part of the graph.

(e) From the graph, it can be observed that during 8am to 9am, the person travelled the maximum distance. Thus, the postman's ride was fastest between 8am and 9am.

Q7)Find out whether the time-temperature graph can be represented as follows. Explain with reasons.



Ans.)

(i) This can be a time-temperature graph, as the temperature can increase with the increase in time.

(ii) This can be a time-temperature graph, as the temperature can decrease with the decrease in time.

(iii) This cannot be a time-temperature graph since different temperatures at the same time are not possible.

(iv) This can be a time-temperature graph, as the same temperature at different times is possible.

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