SHIKSHA CLASSES

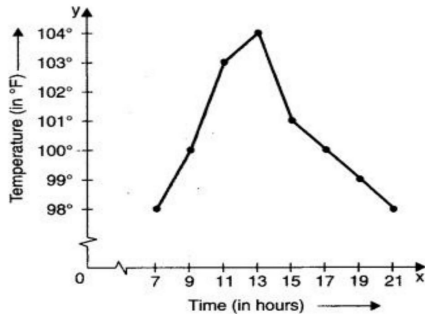|		
Sub. : Maths	**Answer Paper**	Marks : 30
Std. : VIII[th](CBSE)	13: Introduction to Graphs	

Section A (Each 1 Mark)

Select the most appropriate answer from the given options (MCQ'S - Q.1 to Q.5)

: **Observe the following temperature time graph and answer the related questions:**

Q.1 : **103^0 F temperature is at time**
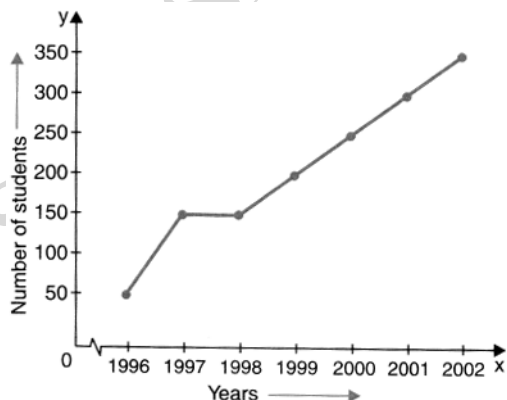
Ans : a) 11 hours

Q.2 : **What is the rise in temperature from 11 hours to 13 hours?**

Ans : a) 1^0F

Q.3 : **What is the fall in temperature from 13 hours to 21 hours?**

Ans : d) 6^0F

: **Observe the following temperature time graph and answer the related questions:**

Q.4 : **How many students appeared in the year 2000?**

Ans: - b) 250

Q.5 : **In which year did the maximum number of students appear?**

Ans : a) 2002

Fill in the blank. (Q.6 to Q.7)

Q.6 : **A point which lies on both the axes is _____.**

Ans : $(0, 0)$ (origin)

Q.7 : **The x-coordinate of every point lying on the y-axis is _____.**

Ans : '0'

Write whether the following statements are True or False. (Q.8 to Q.9)

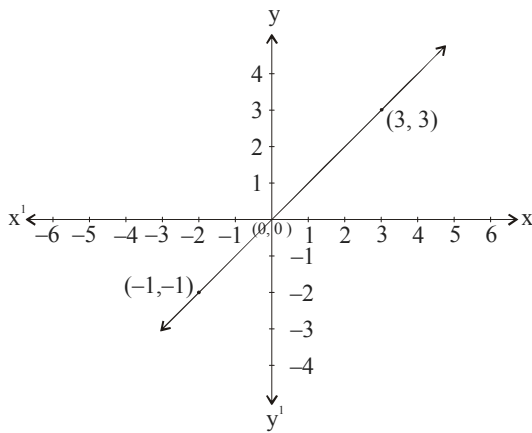**Q.8 :** **The x-coordinate of a point is its distance from x-axis.**

Ans : False

Q.9 : **The relation between dependent variable and independent variable is shown through a graph.**

Ans : True

Section B (Each 2 Marks)

Q.10 : **What will you get after joining the points $(-1, -1), (0, 0)$ and $(3, 3)$?**
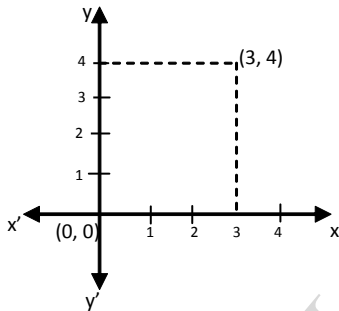
Ans : After plotting the points in a graph

We observe that the points are on a straight line which is passing through (0, 0) 'Origin'.
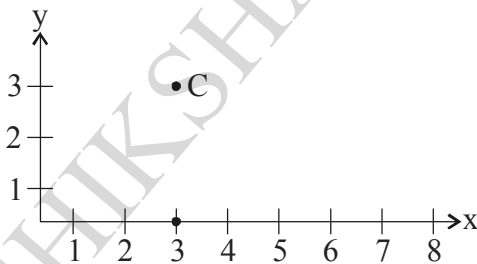
OR

What is the distance of the point (3, 4) from x-axis?

Ans : This distance of the point (3, 4) from x-axis is 4 units

[∵ The distance of a point (a, b) from x-axis = y-co-ordinate]

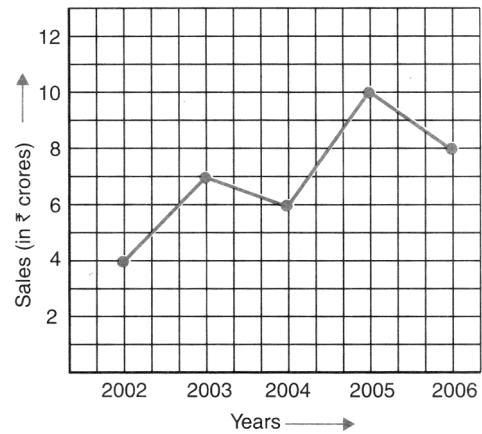**Q.11 :** **In the following graph, which letter indicates the point (3, 0)?**

Ans : Point (3, 0) lines on x-axis which is at distance of 3 units from origin.

Therefore, point A is (3, 0)

Section C (Each 3 Marks)

Q.12 : **The following line graph shows the yearly sales figures for a manufacturing company.**

a) **What were the sales in (i) 2002 (ii) 2006**

Ans : The sales in

(i) 2002 were ₹ 4 crores and in

(ii) 2006 were ₹ 8 crores

b) **Compute the difference between the sales in 2002 and 2006.**

Ans : The difference between the sales in 2002 and 2006

= ₹ 8 crores – ₹ 4 crores = ₹ 4 crores

c) **In which year was there the greatest difference between the sales as compared to its previous year?**

Ans : The difference between the sales in 2002 and 2003

= ₹ 7 crores – ₹ 4 crores = ₹ 3 crores

The difference between the sales in 2003 and 2004

= ₹ 7 crores – ₹ 6 crores = ₹ 1 crores

The difference between the sales in 2004 and 2005

= ₹ 10 crores – ₹ 6 crores = ₹ 4 crores

The difference between the sales in 2005 and 2006

= ₹ 10 crores – ₹ 8 crores = ₹ 2 crores

Therefore, in year 2005 the difference betweeen the sales as compared to its

previous year was the greatest.

OR

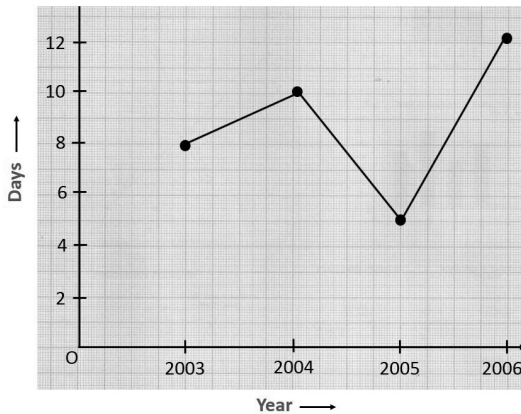**Use the tabes below to draw linear graphs.**

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

Year	2003	2004	2005	2006
Days	8	10	5	12

Ans :

Linear graph showing snow fall in different years

Q.13 : Distance travelled by a car

Time (in hours)	6 a.m	7 a.m	8 a.m	9 a.m
Distances (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 its start?

Ans :
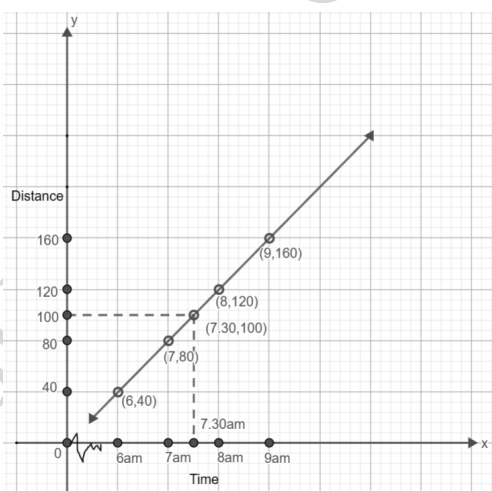
Scale :

On horizontal axis : 2 units = 1 hour

On vertical axis : 2 units = 40 km

Mark time (in hours) on horizontal axis.

Mark distances (in km) on vertical axis

Plot the points (6 a.m., 40), (7 a.m., 80), (8 a.m., 120), and (9 a.m., 160)

Join the points.

We get a linear graph.

(i) Distance covered during 7.30 a.m. to 8 a.m.
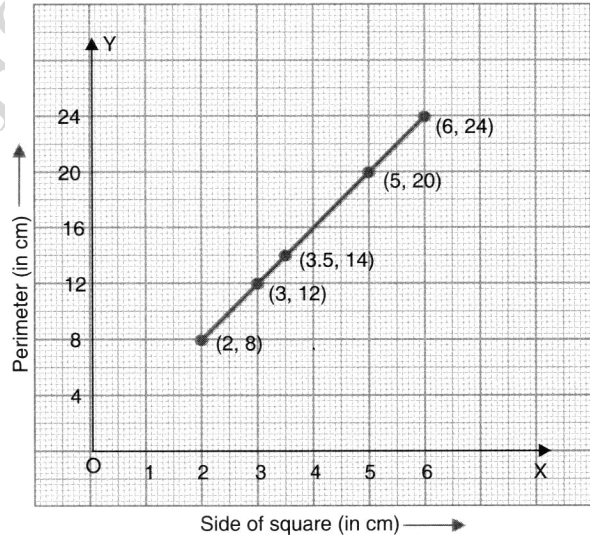
= 120 km – 100 km = 20 km

(ii) The time when the car had covered a distance of 100 km since its start was 7.30 a.m.

Q.14 : 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?

Ans :

Scale :

On horizontal axis : 1 unit = 1cm

On vertical axis : 1 unit = 4 cm

Mark side of the square (in cm) on horizontal axis.

Mark perimeter (in cm) on vertical axis.

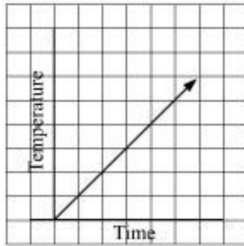Plot the points (2, 8), (3, 12), (3.5, 14), (5, 20) and (6, 24)
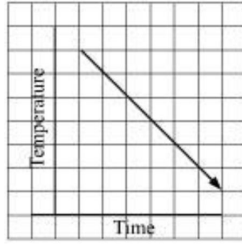
Joint the points.

Yes, it is a linear graph.

Section D (4 Marks Each)

Q.15 : **Can there be a time-temperature graph as follows? Justify your answer.**
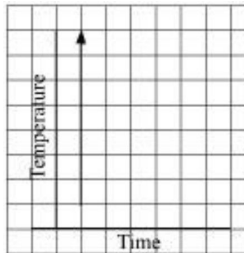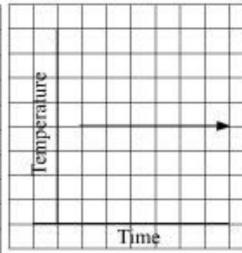
Ans: -

(i)   (ii)

(iii)   (iv)

(i) Yes, it can be

It is a time-tempeature graph because it shows increase in temperature with increase in time.

(ii) Yes, it can be

It is a time-tempeature graph beacuse it shows decrease in temperature with increase in time.

(iii) Yes, it cannot be a time-tempeature graph because it shows infinitely many different temperatures at one particular time which is not possible.

(iv) Yes, it can be

It is a time-temperature graph because it shows a fixed temperature at different times (or increasing times).

OR

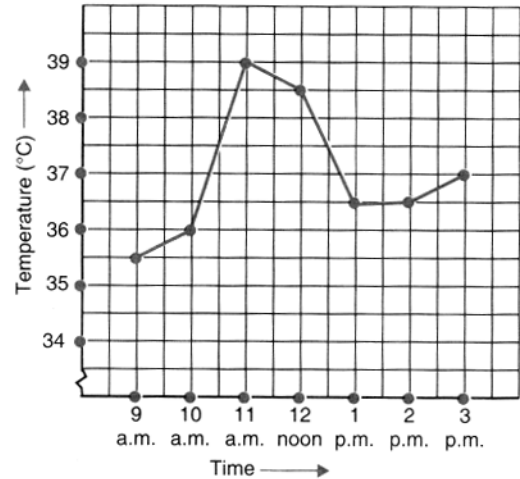**The following graph shows the temperature of a patient in hospital, recorded every hour.**

a) What was the patient's teperature at 1 p.m.?

b) When was the patient's temperature 38.5^{0}C?

c) The patient's temperature was the same two times during the period given. What wre these two times?

d) What was the temperature at 1.30 p.m.? How did you arrive at your answer?

Ans :

a) The patient's temperature at 1 p.m. was 36.5^{0}C.

b) The patient's temperature was 38.5^{0}C at 12 noon.

c) The two times when the patient's temperature was the sme were 1 p.m. and 2 p.m.

d) The temperatue at 1.30 p.m. was 36.5^{0}C.

[From the graph, we see that the tempearture was constant from 1 p.m. to 2 p.m. Since 1.30 p.m. comes in between 1 p.m. and 2 p.m., therefore we arrived at our answer.]
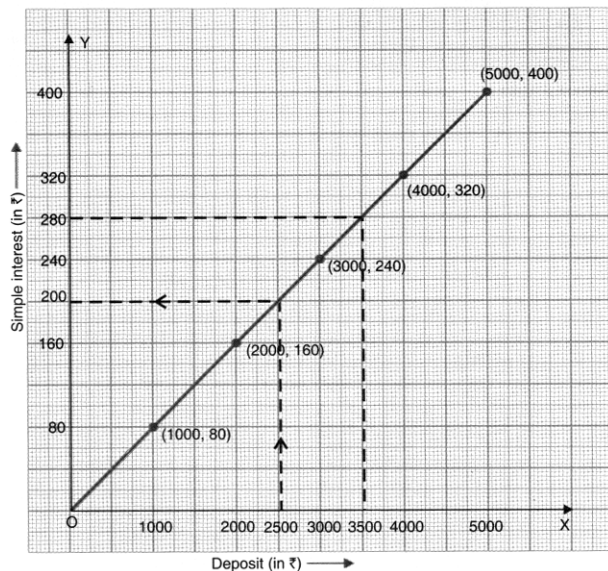
Q.16 : **Interest on deposits for a year**

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 on Rs. 2500 for a year.**

iii) **To get an interest of Rs. 280 per year, how much money should be deposited?**

Ans: - Scale :

     On horizontal axis :   2 units = ₹ 1000

     On vetical axis :   2 units = ₹ 80

Mark deposit (in ₹) on horizontal axis.

Mark simple interest (in ₹) on vertical axis.

Plot the points (1000, 80), (2000, 160), (3000, 240), (4000, 320) and (5000, 400).

Join the points.

We get a linear graph.

i) Yes, The graph passes through the origin.

ii) Interest on ₹ 2500 for a year = ₹ 200

iii) To get an interest of ₹ 280 per year, ₹ 3500 should be deposited.

              ***