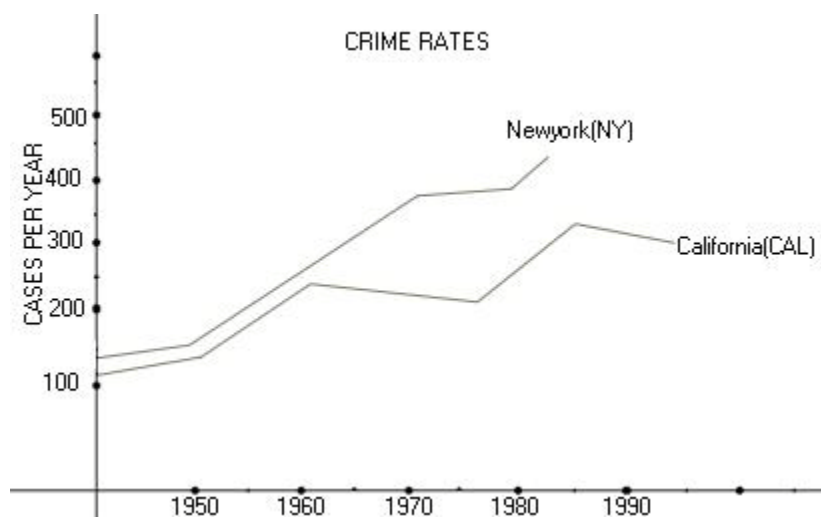


Line Graph

Line Graphs or Cartesian Graphs

This type of graph indicates the variation of a quantity with respect to two parameters represented on x-axis and y-axis respectively. So the candidate must carefully observe the peaks and depths of the graph to interpret the data

Ex. Study the graph carefully and answer the question given below



1. Which year of the following did California have the least number of cases?

1. 1960
2. 1975
3. 1970
4. 1980
5. 1990

Answer : 2

Explanation : 1975

2. How many cases were registered in NY and CAL in 1950?

1. 275
2. 325
3. 320
4. 290
5. 150

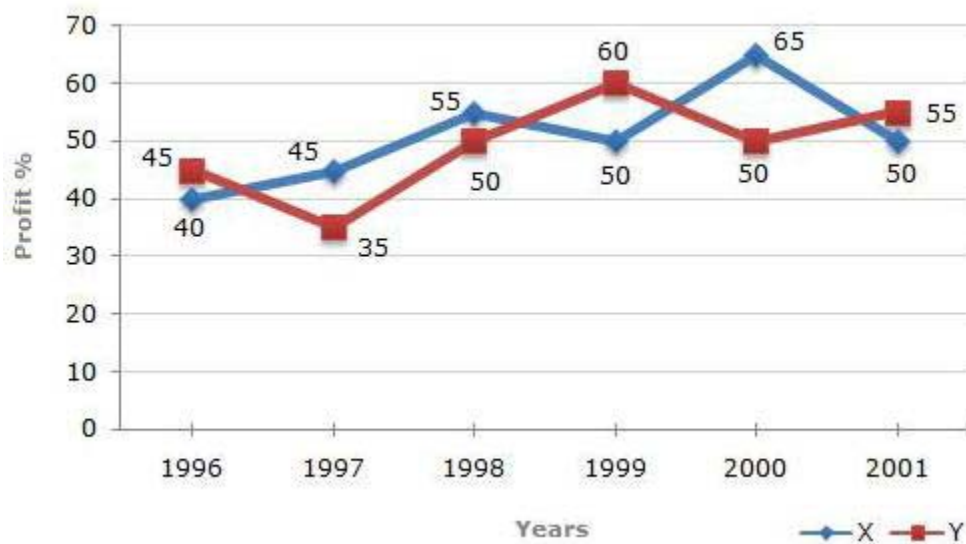
Answer : 1

Explanation : $150+125=275$

Exercise Questions

The following line graph gives the percent profit earned by two Companies X and Y during the period 1996 - 2001.

Percentage profit earned by Two Companies X and Y over the Given Years,
 $\% \text{Profit} = (\text{Income} - \text{Expenditure}) / \text{Expenditure} * 100$



1. The incomes of two Companies X and Y in 2000 were in the ratio of 3:4 respectively. What was the respective ratio of their expenditures in 2000 ?

- a. 7 : 22
- b. 14:19
- c. 15:22
- d. 27:35

2. If the expenditure of Company Y in 1997 was Rs. 220 crores, what was its income in 1997?

- a. Rs.312 crores
- b. Rs.297 crores

- c. Rs.283 crores
- d. Rs.275 crores

3. If the expenditures of Company X and Y in 1996 were equal and the total income of the two Companies in 1996 was Rs. 342 crores, what was the total profit of the two Companies together in 1996 ? (Profit = Income - Expenditure)

- a. Rs.240 crores
- b. Rs.171 crores
- c. Rs.120 crores
- d. Rs.102 crores

4. The expenditure of Company X in the year 1998 was Rs.200 crores and the income of company X in 1998 was the same as its expenditure in 2001. The income of Company X in 2001 was ?

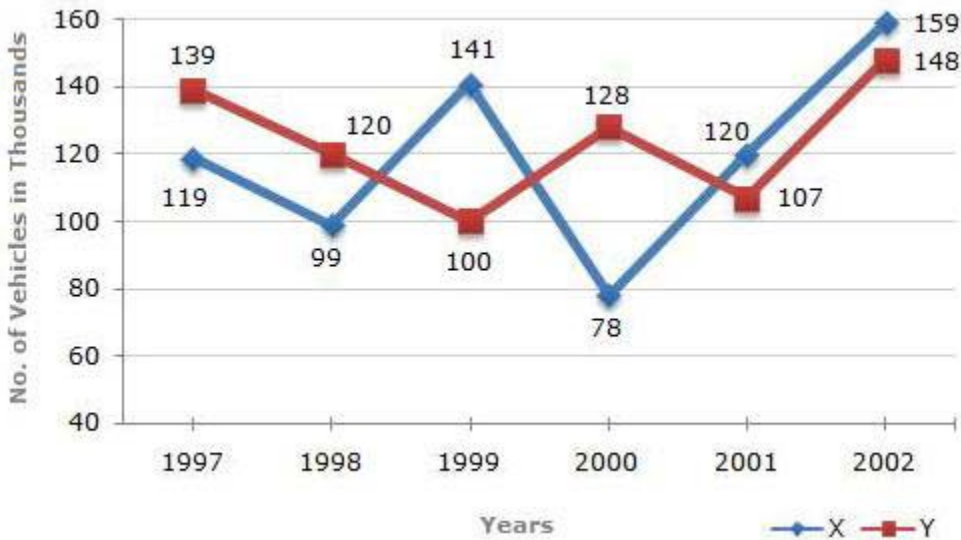
- a. Rs.465 crores
- b. Rs.385 crores
- c. Rs.335 crores
- d. Rs.295 crores

5. If the incomes of two Companies were equal in 1999, then what was the ratio of expenditure of Company X to that of Company Y in 1999 ?

- a. 6:5
- b. 5:6
- c. 11:6
- d. 16:15

Study the following line graph and answer the questions based on it.

Number of Vehicles Manufactured by Two companies over the Years (Number in Thousands)



6. What is the difference between the number of vehicles manufactured by Company Y in 2000 and 2001 ?

- a. 50000
- b. 42000
- c. 33000
- d. 21000

7. What is the difference between the total productions of the two Companies in the given years ?

- a. 19000
- b. 22000
- c. 26000
- d. 28000

8. What is the average numbers of vehicles manufactured by Company X over the given period ? (rounded off to nearest integer)

- a. 119333
- b. 113666

- c. 112778
- d. 111223

9. In which of the following years, the difference between the productions of Companies X and Y was the maximum among the given years ?

- a. 1997
- b. 1998
- c. 1999
- d. 2000

10. The production of Company Y in 2000 was approximately what percent of the production of Company X in the same year ?

- a. 173
- b. 164
- c. 132
- d. 97

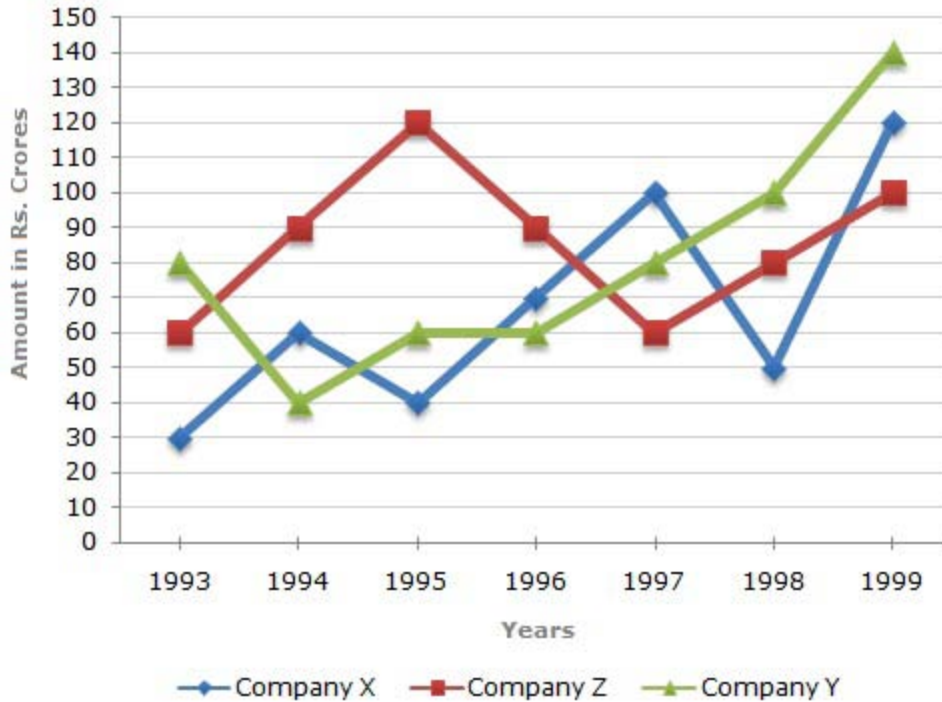
Answer Key

1.c; 2.b; 3.d; 4.a; 5.d; 6.d; 7.c; 8.a; 9.d; 10.b

Exercise Questions

I. Study the following line graph and answer the questions

Exports from Three Companies Over the Years (in Rs. Crore)



1. For which of the following pairs of years the total exports from the three Companies together are equal?

- a) 1995 and 1998 b) 1996 and 1998 c) 1997 and 1998 d) 1995 and 1996

2. Average annual exports during the given period for Company Y is approximately what percent of the average annual exports for Company Z?

- a) 87.12% b) 89.64% c) 91.21% d) 93.33%

3. In which year was the difference between the exports from Companies X and Y the minimum?

- a) 1994 b) 1995 c) 1996 d) 1999

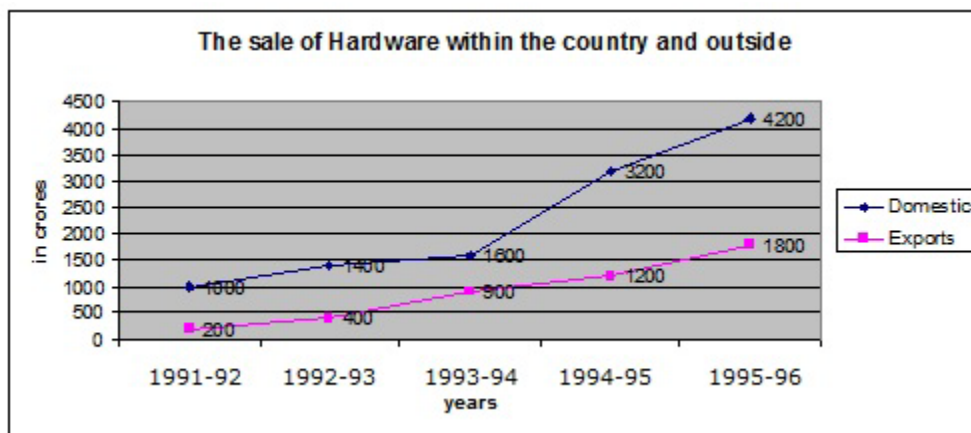
4. What was the difference between the average exports of the three Companies in 1993 and the average exports in 1998?

- a) Rs.15.33crores b) Rs.18.67crores c) Rs.20crores d) Rs.22.17crores

5. In how many of the given years, were the exports from Company Z more than the average annual exports over the given years?

- a)2 b)3 c)4 d) 5

II. The following line chart shows the sale of hardware by the Indian computer Industry between the years 1991-96, within the country and outside in crores of rupees. Study the data given in the chart and answer the questions that follow :



1. What was the difference on sale of hardware between domestic and exports in 1993-94?

- a) Rs.1000 crores b) Rs.500 crores c) Rs.1200 crores d) Rs.700 crores

2. In which of the following years was the percentage increase in sale of hardware in domestic sector maximum over the preceding years ?

- a) 1992-93 b) 1993-94 c) 1994-95 d) 1995-96

3. What was the difference between the total hardware sale in exports sector in 1992-93 and 1993-94 together and that of domestic sector in 1993-94?

- a) Rs.300 crores b)Rs.200 crores c) Rs.400 crores d) Rs.150 crores

4. Approximately what was the percentage increase in sale in domestic sector from 1994-95 to 1995-96?

- a)35 b)25 c)40 d)20

5. What was the difference in the average sale between the domestic and export sectors?

- a) Rs.900 crores b) Rs.1380 crores c) 1560 crores d) Rs.600 crores

Answer & Explanations

1.1. Option D

Explanation:

Total exports of the three Companies X, Y and Z together, during various years are:

In 1993 = Rs. (30 + 80 + 60) crores = Rs. 170 crores.

In 1994 = Rs. (60 + 40 + 90) crores = Rs. 190 crores

In 1995 = Rs. (40 + 60 + 120) crores = Rs. 220 crores

In 1996 = Rs. (70 + 60 + 90) crores = Rs. 220 crores.

In 1997 = Rs. (100 + 80 + 60) crores = Rs. 240 crores.

In 1998 = Rs. (50 + 100 + 80) crores = Rs. 230 crores.

In 1999 = Rs. (120 + 140 + 100) crores = Rs. 360 crores.

Clearly, the total exports of the three Companies X, Y and Z together are same during the years 1995 and 1996.

2. Option: D

Explanation:

From the graph it is clear that

1. The amount of exports of Company X (in crore Rs.) in the years 1993, 1994, 1995, 1996, 1997, 1998 and 1999 are 30, 60, 40, 70, 100, 50 and 120 respectively.

2. The amount of exports of Company Y (in crore Rs.) in the years 1993, 1994, 1995, 1996, 1997, 1998 and 1999 are 80, 40, 60, 60, 80, 100 and 140 respectively.

3. The amount of exports of Company Z (in crore Rs.) in the years 1993, 1994, 1995, 1996, 1997, 1998 and 1999 are 60, 90, 120, 90, 60, 80 and 100 respectively.

Average annual exports (in Rs. crore) of Company Y during the given period

$$= \frac{1}{7} * (80 + 40 + 60 + 60 + 80 + 100 + 140) = \frac{560}{7} = 80$$

Average annual exports (in Rs. crore) of Company Z during the given period

$$\frac{1}{7} * (60 + 90 + 120 + 60 + 80 + 100) = \frac{600}{7}$$

$$\therefore \text{Required percentage } \frac{80}{(600/7)} * 100 \% = 93.33\%$$

3. Option C

Explanation:

The difference between the exports from the Companies X and Y during the various years are:

In 1993 = Rs. (80 - 30) crores = Rs. 50 crores.

In 1994 = Rs. (60 - 40) crores = Rs. 20 crores.

In 1995 = Rs. (60 - 40) crores = Rs. 20 crores.

In 1996 = Rs. (70 - 60) crores = Rs. 10 crores.

In 1997 = Rs. (100 - 80) crores = Rs. 20 crores.

In 1998 = Rs. (100 - 50) crores = Rs. 50 crores.

In 1999 = Rs. (140 - 120) crores = Rs. 20 crores.

Clearly, the difference is minimum in the year 1996.

4. Answer: Option C

Explanation:

Average exports of the three Companies X, Y and Z in 1993 = $(30+80+60)/3 = 170/3$ crores.

Average exports of the three Companies X, Y and Z in 1998 = $(50+100+80)/3 = 230/3$.

Difference = $(230-170)/3 = 60/3 = 20$ crores

5. Option C

Explanation: $1/7 * (60 + 90 + 120 + 90 + 60 + 80 + 100) = 600/7 = 85.71$ crores

From the analysis of graph the exports of Company Z are more than the average annual exports of Company Z (i.e., Rs. 85.71 crores) during the years 1994, 1995, 1996 and 1999, i.e., during 4 of the given years.

II. 1. Answer (d)

2. Answer (c)

3. Answer (a)

4. Answer (d)

5. Answer (b)