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Graph

Data Interpretation-Bar



Concept :

The bar graph is one of the frequent methods used to present various types of data. In data interpretation, it is the representation of data where the vertical bars are placed at equal distance from each other. The value of the data represented is given by the height and length of the bars. The width here is not important it is only used so that the presentation is clear.

They are plotted against the horizontal axis known as the x-axis. The value can be shown by coloured or shaded vertical bars of equal width. In a horizontal bar graph, the values are plotted against the vertical axis called the y-axis. They are commonly used as the data can be easily analyzed.



Concept :

There are types of bar graphs used to represent the data. They are as follows.

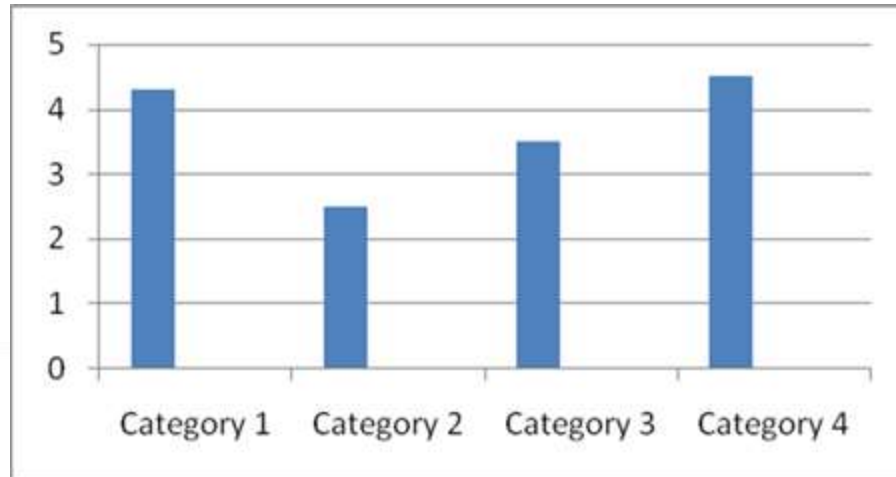
1. Simple bar graph
2. Composite bar graph
3. Stacked bar chart
4. Bar charts to show deviation



Concept :

Simple Bar Chart

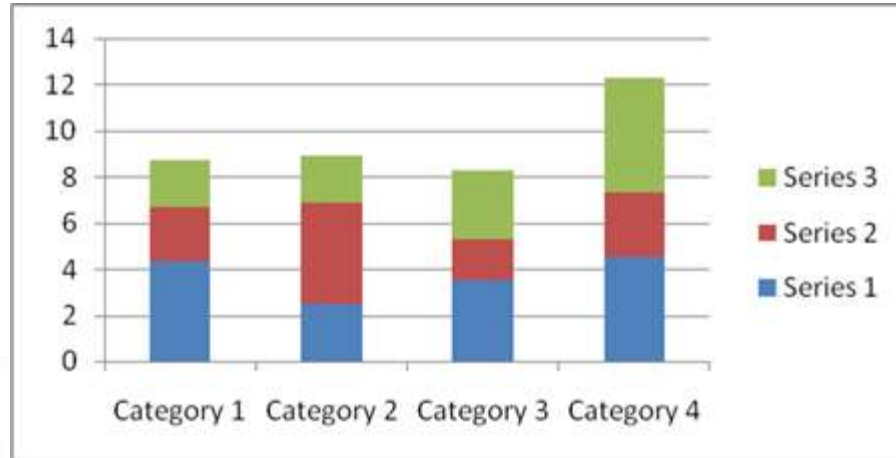
As the name suggests simple bar chart is the simplest bar graph of all. It is used to describe one continuous variable along with the one discrete value. The figure below shows the proper representation of a simple bar chart.



Concept :

Composite Bar Chart

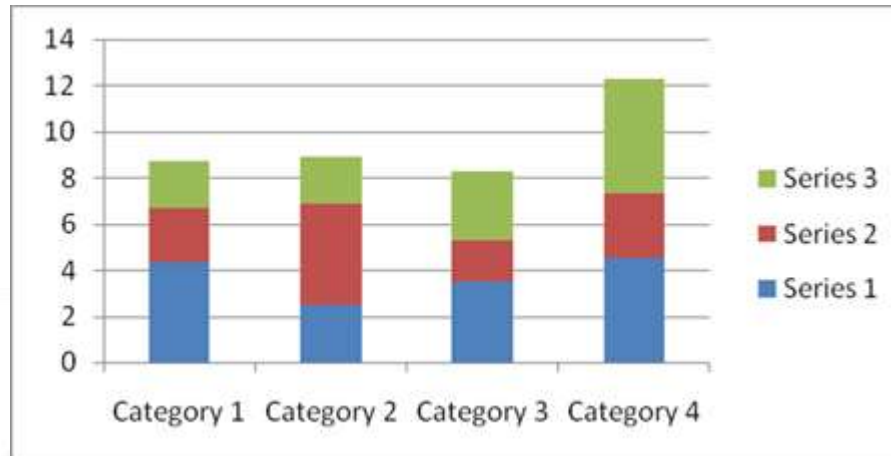
To solve the limitation of simple bar chart composite bar chart is used. We use a composite bar chart to show two or more than two continuous variables on the same graph. This is the figure below that describes how a composite bar-chart looks like.



Concept :

Stacked Bar Chart

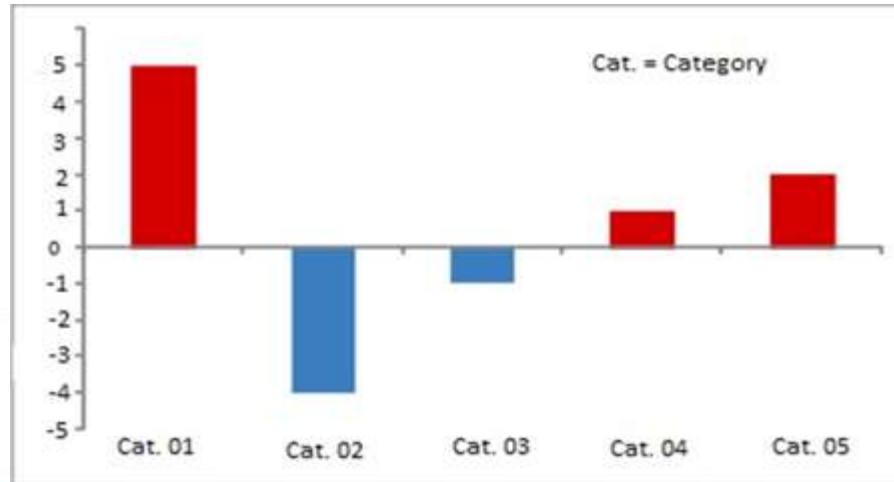
Stacked bar charts are used to represent the break-up of the content for continuous variables. It is very convenient to use it for comparing different sets of data. It can be used to represent factors such as revenues, profits, losses over a period of couple years. The figure below describes the same.



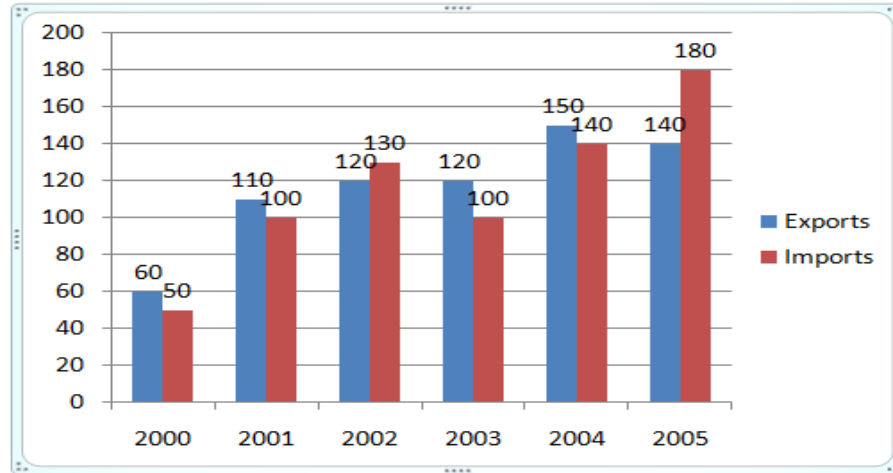
Concept :

Bar Charts to Show Deviation

Mostly bar charts are used to show the deviation. And that is why the bar charts that are used to show the deviation are very common. Deviation charts can show the deficit as well as the surplus, imports, and exports, etc. It is usually required to represent the positive as well as negative values of the continuous variables.



As shown in the figure a baseline is created wherein the positive values are shown above the line while the negative values are shown below the line. Answer the questions based on the given figure below.



Question: 01

Out of the given years, in how many did the export was more than 10% as compared to the import?

- A. 1
- B. 2
- C. 3
- D. 4

Answer: B



Explanation:

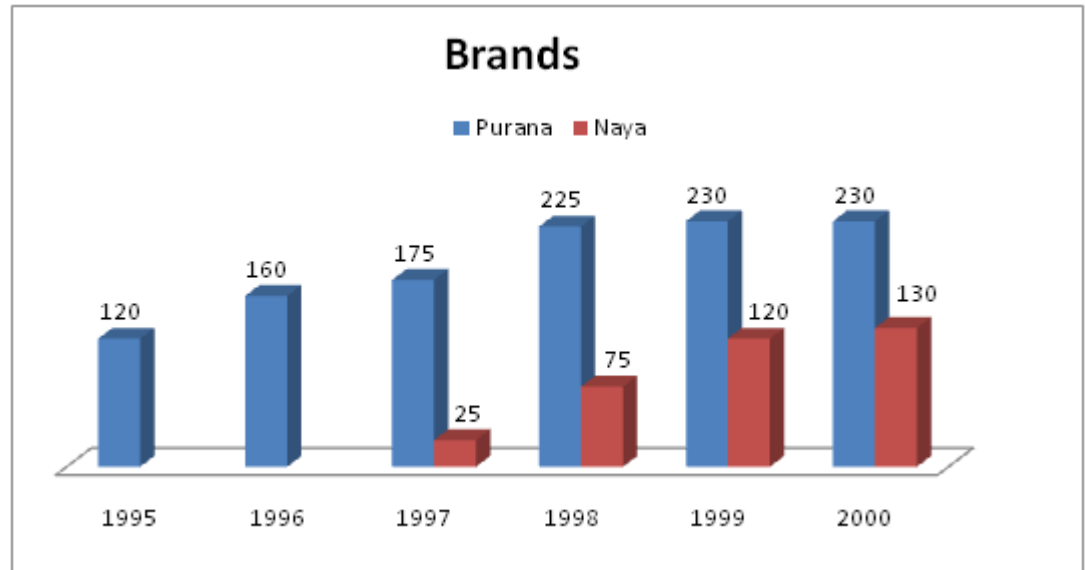
In the year 2000, exports were 60 while the imports were 50. So 10% of 50 is 5. And thus the total will be 55. Here $60 > 55$. Similarly in 2001, $110 = 10\%$ of 100.

In 2002, $120 < 130$. For 2003, $120 > 10\%$ of 100. For 2004, $150 < 10\%$ of 140.

In 2005, $190 < 10\%$ of 180. So there are years i.e. 2000 and 2003 where exports were 10 % greater than the imports. So the correct answer is B.



Purana and Naya two brand of mixer-grinder available in the market. Purana was introduced in 1990 and Naya was introduced in 1997. For both brands, 20% of the mixer-grinder bought in a particular year are disposed off as junk exactly two year later. It is known that 10 Purana mixer-grinder were disposed off in 1997. The following chart show the operation from 1995 to 2000, as at end of the year.



Question: 02

How many Naya mixer-grinder disposed off by end of 2000?

- A. 10
- B. 15
- C. 22
- D. Cannot determine

Answer:B



Explanation:

In the year, 1998, $(75 - 25) = 50$ mixer-grinder purchased.

Then, In 2000, 20% Of 50 disposed off = 10.

Similarly, number of mixer grinder purchased in 1997 is 25.

Number of mixer-grinder disposed in 1999 = 20% of 25 = 5.

Total number of mixer-grinder disposed off at end of 2000 = $10 + 5 = 15$.



Question: 03

How many Naya mixer-grinders were purchased in 2000?

- A. 45
- B. 55
- C. 50
- D. 64

Answer:C



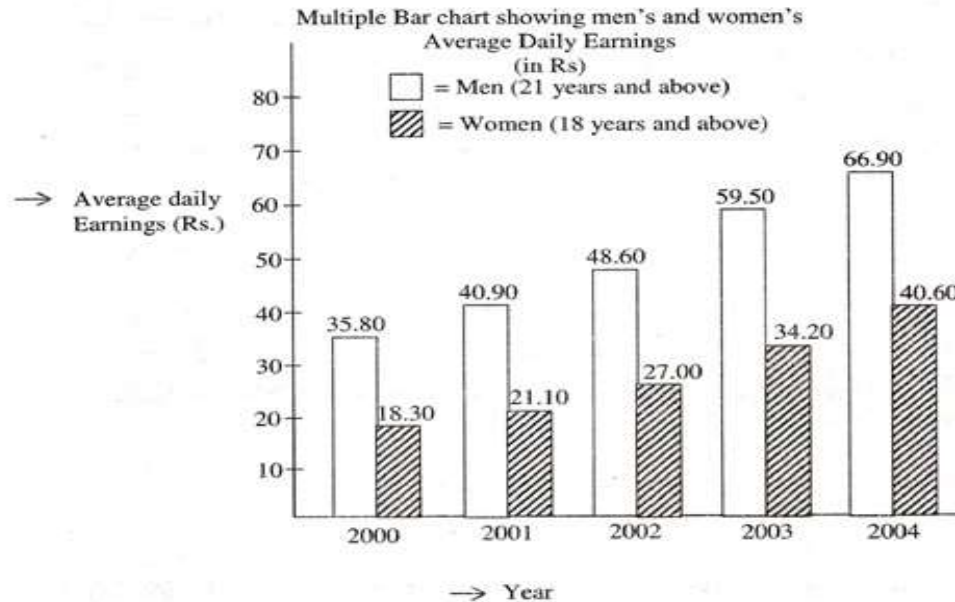
Explanation:

It is given that 20% of the mixer-grinders are disposed off after 2 years. There for in 1999, 5 mixer-grinder disposed off (20% of 25).

Also the number of mixer grinder in circulation in 1999 was 120 and 1998 was 75. The difference is 45. The total number of mixer-grinder purchased is $(45+5)= 50$.



The following is a multiple bar chart showing man's and women's average daily earnings in certain industries. Study the chart and answer the questions given below.



Question: 04

In which year is the percentage increase in the average daily earnings of man over the preceding years, the maximum ?

- A. 2004
- B. 2003
- C. 2001
- D. 2002

Answer: B



Explanation:

$$\begin{aligned} &\% \text{ increase in 2004,} \\ &= \{(66.90 - 59.50) / 59.50\} * 100 = 12.43\% \end{aligned}$$

$$\begin{aligned} &\% \text{ increase in 2003,} \\ &= \{(59.50 - 48.60) / 48.60\} * 100 = 22.24 \end{aligned}$$

$$\begin{aligned} &\% \text{ increase in 2002,} \\ &= \{(48.60 - 40.90) / 40.90\} * 100 = 18.82\% \end{aligned}$$

$$\begin{aligned} &\% \text{ increase in 2001,} \\ &= \{(40.90 - 35.80) / 35.80\} * 100 = 14.25 \end{aligned}$$

Thus, maximum increase in daily earning of men over preceding year is in 2003.



Question: 05

The difference between the average daily earnings of men and women over successive years?

- A. Remains the same
- B. Decreases
- C. Increases
- D. None of these

Answer:C



Explanation:

Difference between earning of man and women in 2000,
 $= 35.8 - 18.3 = 17.5$

Difference between earning of man and women in 2012,
 $= 40.90 - 21.10 = 19.8$

Difference between earning of man and women in 2002,
 $= 48.60 - 27.0 = 21.6$

Difference between earning of man and women in 2003,
 $= 59.50 - 34.20 = 25.3$

Difference between earning of man and women in 2004,
 $= 66.90 - 40.60 = 26.3$

pattern show, its increasing



Question: 06

In which year is the ratio of man's average daily earnings to women's average daily earnings is the highest?

- A. 2001
- B. 2004
- C. 2003
- D. 2000

Answer:A



Explanation:

Required ratio in 2000,
 $= 35.80 / 18.30 = 1.9$

Required ration in 2001,
 $= 40.9 / 21.1 = 1.93$

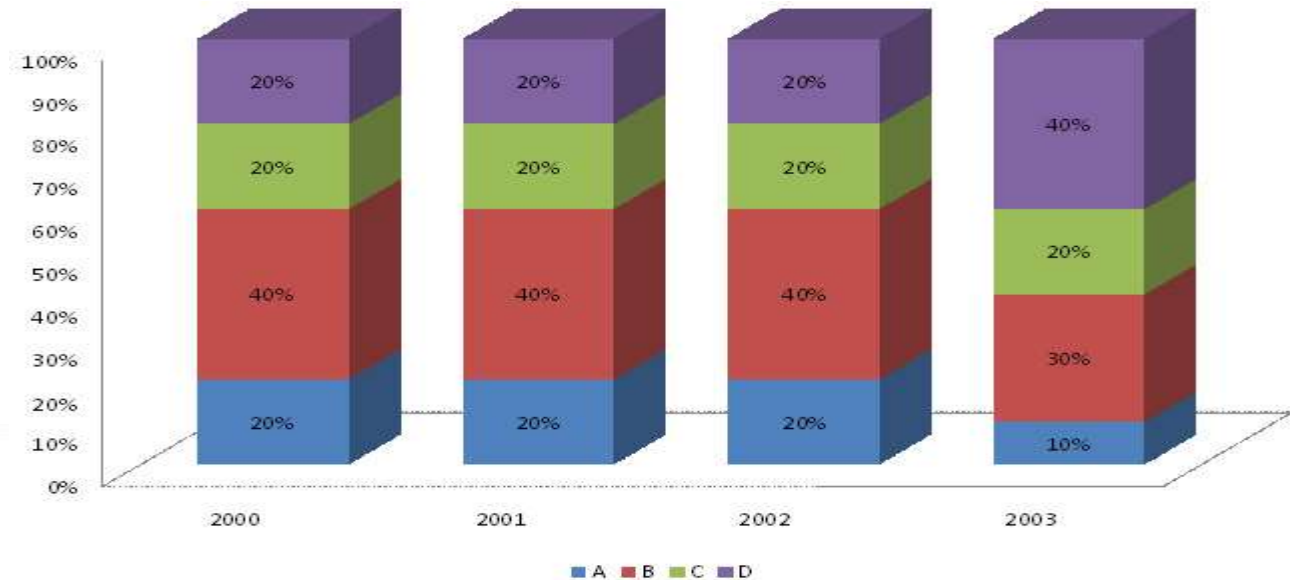
Required ration in 2002,
 $= 48.60 / 27.0 = 1.8$

Required ration in 2003,
 $= 59.5 / 34.20 = 1.73$

Required ration in 2004,
 $= 66.90 / 40.60 = 1.64$

It is highest in 2001.

The cumulative bar chart below gives us the production of four Products A, B, C and D for four years. It is known that the total production increases @20% over its value in the previous year. the difference between C's production in 2003 and A's production in 2001 is 2640 units.



Question: 07

Assuming on pile up of inventory at the beginning or the end of year, what is the ratio of the number of units of C produced in this four years?

- A. 120 : 175 : 260 : 22
- B. 125 : 135 : 240 : 224
- C. 125 : 165 : 270 : 216
- D. 175 : 150 : 180 : 216

Answer:D



Explanation:

Assume the total production of the first year as 1000, second year becomes 12000, third year 14400 and fourth year 17280.

Then,

$$0.2 * 17280 - 0.2 * 12000 = 1056$$

But this difference is given as 2640. Hence, the value of production will be; 25000, 30000, 36000, and 43200 respectively for the 4 years.

Ratio of the number of units C produced in four years ,

$$= 0.2 * 25000 : 0.2 * 30000 : 0.2 * 36000 : 0.2 * 43200$$

$$250 : 300 : 360 : 432 = 175 : 150 : 180 : 216$$



Question: 08

If the price of four products is in the ratio of 3:5:7:8, what is the ratio of the revenue generated by these product in 2002

- A. 6 : 15 : 21 : 16
- B. 4 : 10 : 14 : 9
- C. 9 : 16 : 24 : 20
- D. 3 : 10 :: 7 : 8

Answer: D



Explanation: 08

Assume the total production of the first year as 1000, second year becomes 12000, third year 14400 and fourth year 17280.

Then,

$$0.2 * 17280 - 0.2 * 12000 = 1056$$

But this difference is given as 2640. Hence, the value of production will be; 25000, 30000, 36000, and 43200 respectively for the 4 years.

Ratio of revenue generated in 2002,

$$= 2 * 3 : 4 * 5 : 2 * 7 : 2 * 8$$

$$= 6 : 20 : 14 : 16$$

$$= 3 : 10 : 7 : 8$$



Question: 09

Due to extra set up time required, the production in 2001 drops by 12.5% over that in 2000, what should be the growth rate of production in 2002 to maintain the compounded annual growth rate(CARG) at 20%?

- A. 56%
- B. 48%
- C. 52%
- D. 65%

Answer:D



Explanation:

Assume the total production of the first year as 1000, second year becomes 12000, third year 14400 and fourth year 17280.

Then,

$$0.2 * 17280 - 0.2 * 12000 = 1056$$

But this difference is given as 2640. Hence, the value of production will be; 25000, 30000, 36000, and 43200 respectively for the 4 years.

$$\text{Growth rate of production} = \{(144 - 87.5) * 100\} / 87.5 = 65\% \text{ (approx)}$$



Question: 10

Which of the following is not true?

- A. In the given period, the maximum number of units p
- B. In 2003, the number of units of C produced was th
- C. The only product that does not show an increasing
- D. None of these

Answer: C

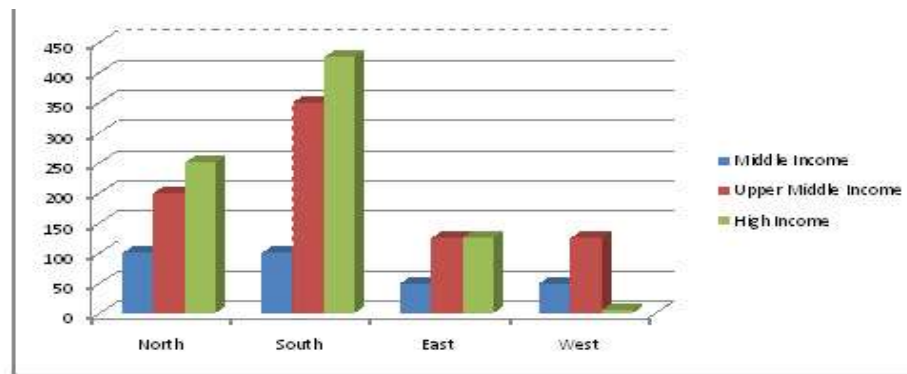


Explanation:

Statement 3 is not true, since both A and B have not shown an increasing trend.



The following bar chart gives the growth percentage in the number of households in middle, upper-middle and high-income categories in the four regions for the period between 1987-88 and 1994-95.



	No. of Households In 1987-88 (in thousands)	Average Household Income 1987-88	Growth in average income 1994-95 over 1987-88
Middle Income	40	Rs. 30,000	50%
Upper Income	10	Rs. 50,000	60%
High Income	5	Rs. 75,000	90%

Question: 11

What is the percentage increase in total number of households for the northern region(upper-middle) over the given period?

- A. 100%
- B. 200%
- C. 240%
- D. 300%

Answer:B



Explanation: 11

The percentage increase in total number of households for the northern region for upper-middle income category is 200%.



Question: 12

What was the total households income in northern region for upper-middle class?

- A. Rs 50 lakh
- B. Rs 500 million
- C. Rs 300 million
- D. Cannot determined

Answer:D



Explanation:

Region wise breakup is not available. hence, question cannot be answered.



Question: 13

Which region showed the highest growth in number of households in all the income categories for the period ?

- A. North
- B. South
- C. West
- D. None of these

Answer:B

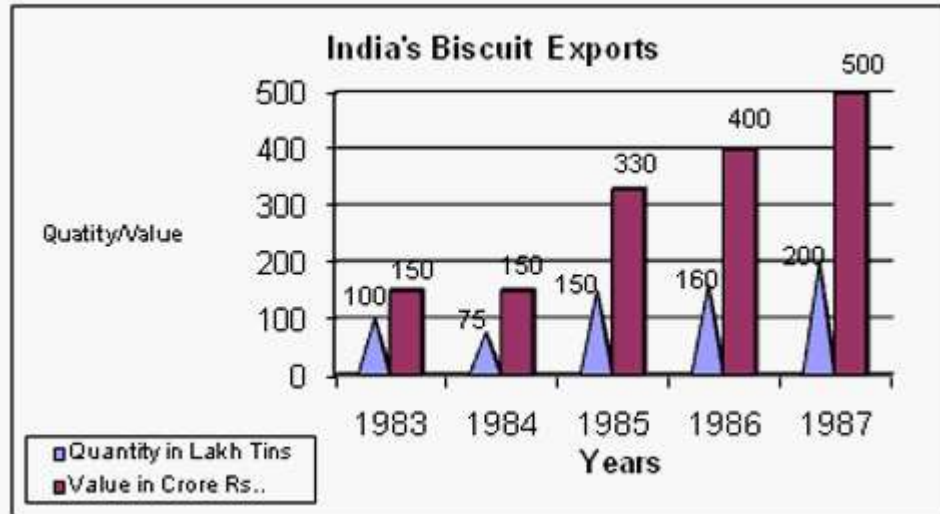


Explanation:

From graph it is clear that southern region showed the highest growth in number of households in all the income categories for the period.



Study the following graph and answer the questions that follow.



Question: 14

If in 1986 tins were exported at the same rate per tin as in 1985, then what would be the value of exports in 1986? (Crores of Rupees)

- A. 400
- B. 420
- C. 375
- D. 352

Answer:D



Explanation:

Value in 1985: $330/150 = 2.2$.

Value in 1986: $160 \times 2.2 = 352$.

Hence option E



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Question: 15

In which year was the value per tin the minimum?

- A. 1987
- B. 1983
- C. 1985
- D. 1986

Answer: B



Explanation:

In 1983, value per tin is $150/100$, which is the lowest for all the years. Hence 5.



THANK YOU

