MATHS

BOOKS - PEARSON IIT JEE FOUNDATION

STATISTICS

Example

1. Given below is the data showing the number of children in a family in a locality of 15 families.

Prepare the frequency table for the data 1, 3, 5, 4, 3, 2, 1, 1, 3, 2, 2, 1, 4, 2, and 1.

Watch Video Solution

2. Represent the following frequency distribution as a bar graph :

Value of Variable (x)	1	3	4	6	7
Frequency (F)	4	3	2	5	1

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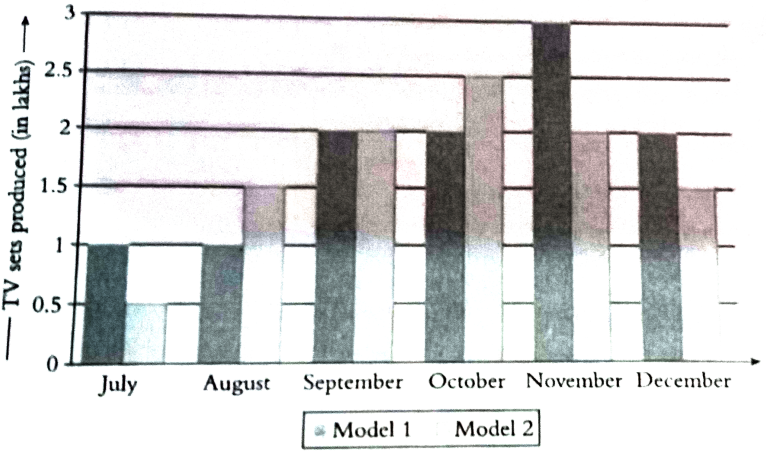
3. Two different models of TV sets are produced in a factory and are given below as a double bar graph. Read the data and answer the following questions :



(A) What information does the graph represent ?

(b) In which month, both the models of TV sets produced are equal ?

(c) In which month, both the model of TV sets produced are maximum ?

(d) In which month, both the models of TV sets produced are minimum and how many are they ?

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4. A person spends his time every day as shown below :

Activity	Study	Games	Yoga and Dance	Sleeping	Misce
Number of hours	9	3	3	7	

Present the data in pie chart.

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5. Draw a line graph to represent the runs made by different batsmen in a match whose details are given in the following table :

Player	P_1	P_2	P_3	P_4	P_5	P_6	P_7
Runs made	30	45	55	20	40	35	50

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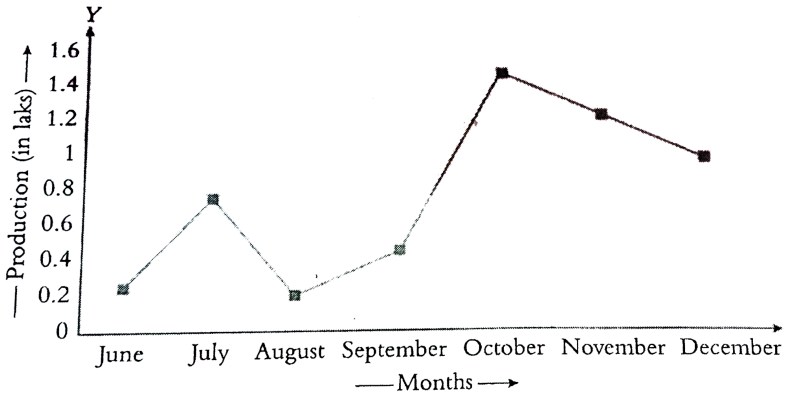
6. The line graph given below shows the production of a particular model of bike [roduced in different months. Read the line graph and answer the following questions :

(a) In which month is the production maximum ?

(b) In which month is the production least ?

(c) In which two successive months has the production increased ?

(d) In which two successive months has the production decreased ?



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7. Find the mean of the first 10 prime numbers.

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8. If the mean of the data 9, 17, 18, 14, x, 16, 15, 11 and 12 is x, then find the value of x.

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9. There are 7 observations in the data and their mean is 11. If each observation is multiplied by 2, then find the new mean.

Watch Video Solution

10. The marks (maximum marks 100) obtained by 20 students in a test are given below :

Marks Obtained (x)	Number of Students (f)
40	3
55	4
60	2
70	5
75	4
85	1
95	1
	$N = 20$

Find the mean marks of the 20 students.

A. 64

B. 64.5

C. 54

D. 54.5

Answer: B

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11. Find the median of the following observation 12, 18, 11, 21, 32, 16, and 22.

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12. Find the median of the data 21, 33, 15, 19, 26, 32, 14 and 24.

Watch Video Solution

13. the median of 11 observations is 10. Find the maximum numbe of possible observations in the data which are less than 10.

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14. Find the mode of the observations 8, 2, 3, 4, 6, 3, 2, 4, 5, 4, 1, 1, 4, 6, and 8.

A. 2

B. 3

C. 4

D. 8

Answer: C

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15. The mode of the unimodal data 7, 8, 9, 8, 9, 10, 9, 10, 11, 10, 11, 12 and x is 10. Find the value of x.

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16. There are 10 marbles in a box which are marked with the distinct numbers from 1 to 10. If a marble is drawn, then what is the probability of getting prime numbered marble ?

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17. There are 10 marbles in a box which are marked with the distinct numbers from 1 to 10. If a marble is drawn, then what is the probability of getting a marble being a number multiple of 3 ?

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18. Given below is the data showing the number of children in a family in a locality of 15 families.

Prepare the frequency table for the data 1, 3, 5, 4, 3, 2, 1, 1, 3, 2, 2, 1, 4, 2, and 1.

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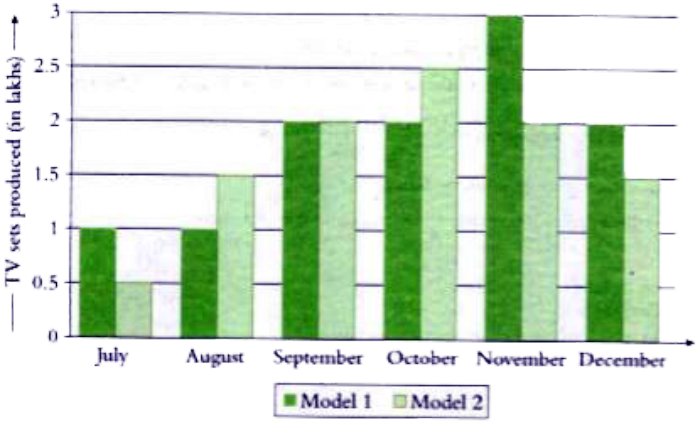
19. Represent the following frequency distribution as a bar graph:

Value of Variable (x)	1	3	4	6	7
Frequency (f)	4	3	2	5	1

Watch Video Solution

20. Two different models of TV sets are produced in a factory and are given below as a double bar graph. Read the data and answer the following questions:



What information does the graph represent?

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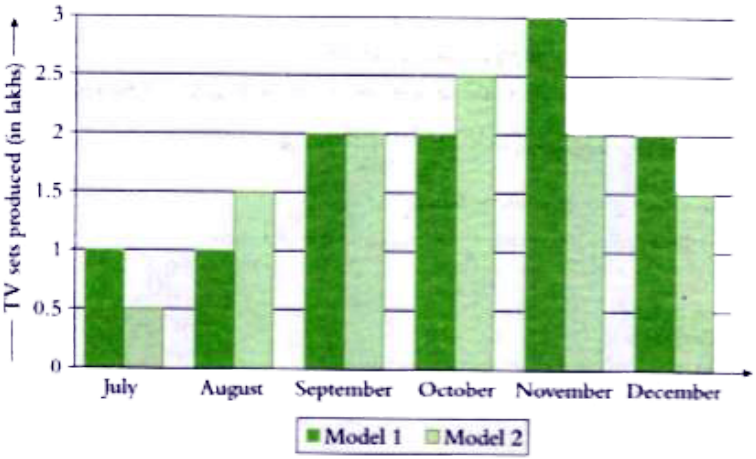
21. Two different models of TV sets are produced in a factory and are given below as a double bar graph. Read the data and answer the following questions:



In which month, both the models of TV sets produced are equal?

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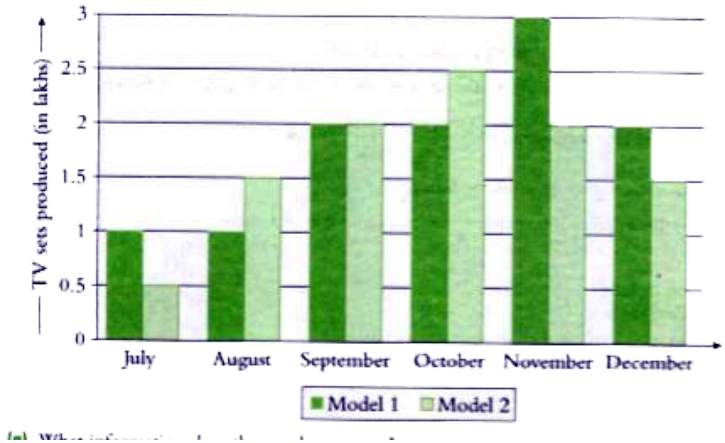
22. Two different models of TV sets are produced in a factory and are given below as a double bar graph. Read the data and answer the following questions:



In which month, both the models of TV secs produced are maximum?

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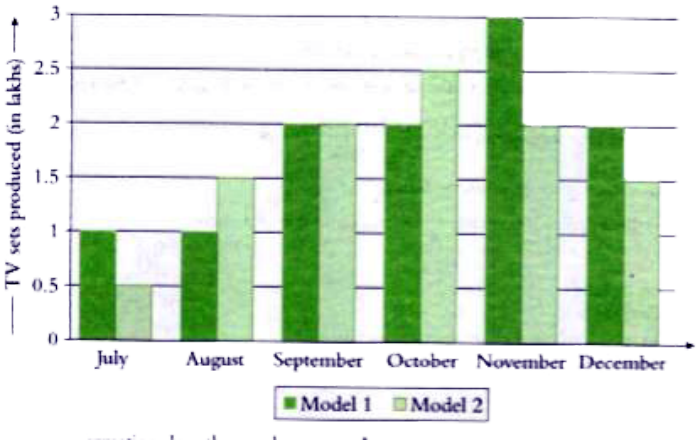
23. Two different models of TV sets are produced in a factory and are given below as a double bar graph. Read the data and answer the following questions:



In which month, both the models of TV sets produced are minimum and how many are they?

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24. Draw a line graph to represent the runs made by different batsmen in a match whose details are given in the following table:

Player	P_1	P_2	P_3	P_4	P_5	P_6	P_7
Runs made	30	45	55	20	40	35	50

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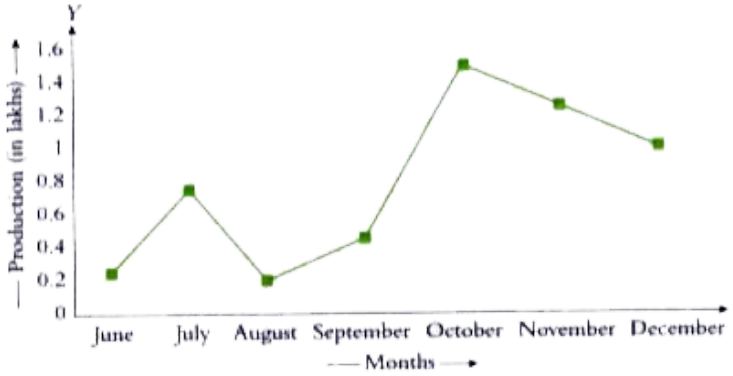
25. The line graph given below shows the production of a particular model of bike produced in different months. Read the line graph and answer the following questions:

In which month is the production maximum?



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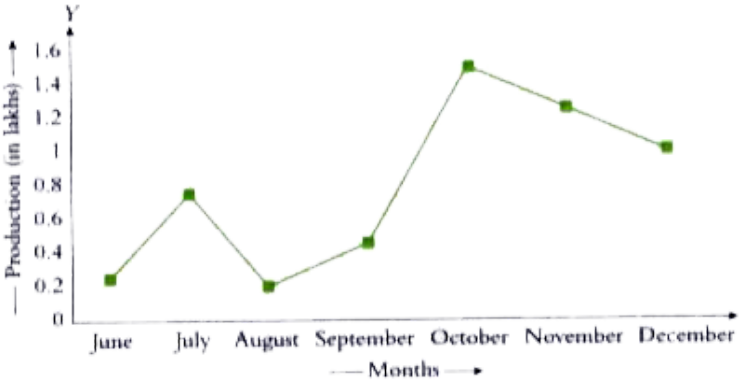
26. The line graph given below shows the production of a particular model of bike produced in different months. Read the line graph and answer the following questions:

In which month is the production least?



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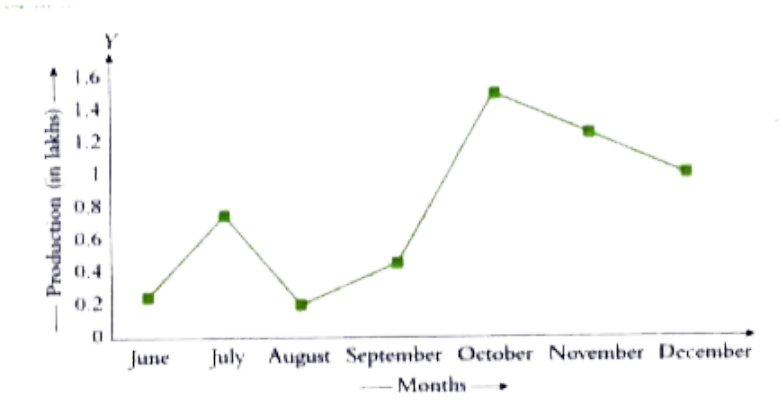
27. The line graph given below shows the production of a particular model of bike produced in different months. Read the line graph and answer the following questions:

In which two successive months has the production increased?



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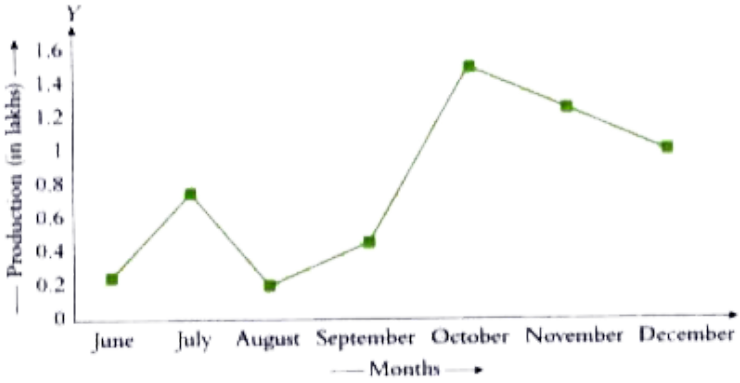
28. The line graph given below shows the production of a particular model of bike produced in different months. Read the line graph and answer the following questions:

In which two successive months has the production decreased?



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29. Find the mean of the first 10 whole numbers.

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30. If the mean of the data 9, 17, 18, 14, x, 16, 15, 11 and 12 is x, then find the value of x.

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31. Mean of 9 observations in the data is 14. If each observation is multiplied by 4. then find the new mean is ____.

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32. The marks (maximum marks 100) obtained by 20 students in a test are given below :

Marks Obtained (x)	Number of Students (f)
40	3
55	4
60	2
70	5
75	4
85	1
95	1
	$N = 20$

Find the mean marks of the 20 students.

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33. Find the median of the following observation 12, 18, 11, 21, 32, 16, and 22.

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34. Find the median of the data 56, 67, 54, 34, 78, 43, 23.

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35. the median of 11 observations is 10. Find the maximum numbe of possible observations in the data which are less than 10.

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36. Find the mode of the observations 12, 8, 4, 8, 1, 8, 9, 11, 9, 10, 12, 8.

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37. The mode of the unimodal data 7, 8, 9, 8, 9, 10, 9, 10, 11, 10, 11, 12 and x is 10. Find the value of x.

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38. There are 10 marbles in a box which are marked with the distinct numbers from 1 to 10. If a marble is drawn, then what is the probability of getting a perfect squared marble?

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39. There are 10 marbles in a box which are marked with the distinct numbers from 1 to 10. If a marble is drawn, then what is the probability of getting a marble being a odd number less than 8?

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Very Short Answer Type

1. If the range of a data is 9 and its highest value is 81, then its least value is

A. 71

B. 72

C. 73

D. 74

Answer: B

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2. The mean of the observation 7, 8, 9, 11 and 15 is 10.

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3. The median of the data 13, 12, 10, 8, 4, 6, and 15 is 10.

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4. the mode of the data 8, 4, 5, 3, 6, 7, 7, 8, 4, 6, 8, 9 and 9 is 7.

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5. For an unbiased coin, the probability of getting tail is 1/2.

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6. The mean of 20, 40, 35, 42, and 45 is ___.

A. 24

B. 36

C. 36.4

D. 46.4

Answer: C

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7. In a pie chart, the central angle for a component value of 240, when the total value is 720, is _____.

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8. In a bar graph, the height of a bar is 5.2 cm. If 1 cm=80 units, then the value represented by the bar is _____ units.

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9. the range of the data 13, 18, 20, 15, 12, 17, 9, 14, 11, and 16 is _____.

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10. If the sum of 10 observations is 95, then their mean is _____.

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11. In a pictograph, if 1 picture = 80 cars, then 240 cars is equal to _____ pictures.

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12. the median of the data 13, 12, 14, 13, 15, 16, 18, is _____.

A. 12

B. 13

C. 14

D. 15

Answer: C

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13. If a dice is rooled, then the probability of getting a prime number is _____.

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14. When an unbiased coin is tossed, the probability of getting a head is _____.

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15. The maximum value of the probability of an event is _____.

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16. The measures of central tendency are _____.

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17. The middle value of a data, when it is arranged in ascending or descending, is called _____.

Watch Video Solution

18. If a dics is thrown, then the probability of getting an even number is _____.

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19. The mode of a data is _____.

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20. The central angle of a component in a pie chart is _____.

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21. The graphs drawn generally for representing a data are _____.

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22. When a dice is thrown, the outcomes are _____.

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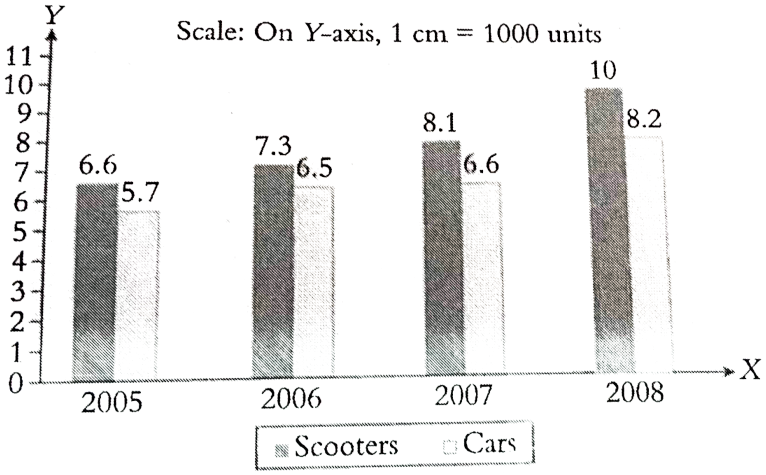

23.

In which year is the difference between the sales of the scooters and the sales of cars the least ?

A. 2005

B. 2006

C. 2007

D. 2008

Answer: B

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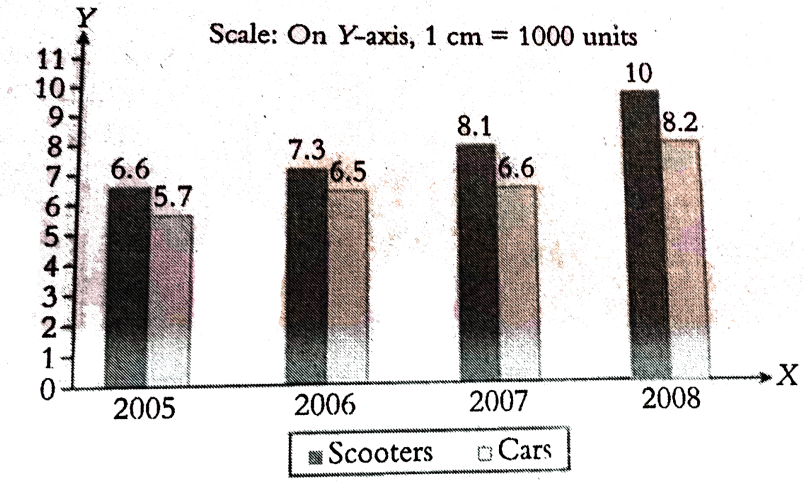

24.

Total number of vehicles (scooters and cars) sold in the year 2005 and 2006 is _____.

A. 26100

B. 28500

C. 25100

D. 27500

Answer: A

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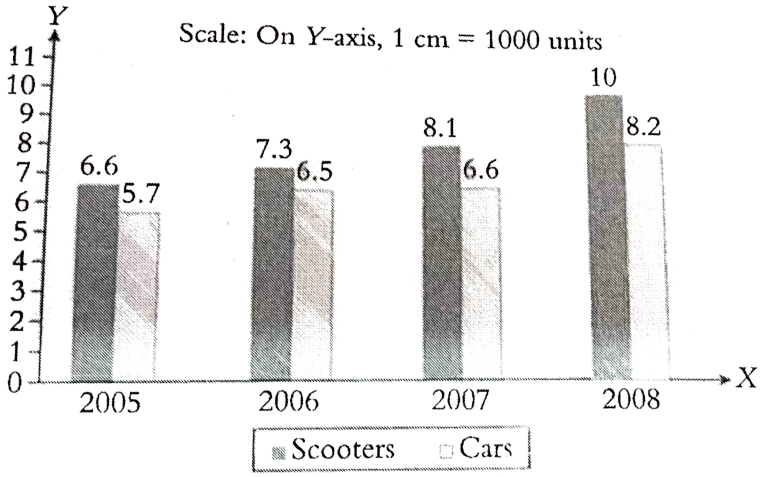

25.

Find the maximum difference between sales of scooters and that of cars, in ant year, in the given period.

A. 1500

B. 1700

C. 1800

D. 2000

Answer: C

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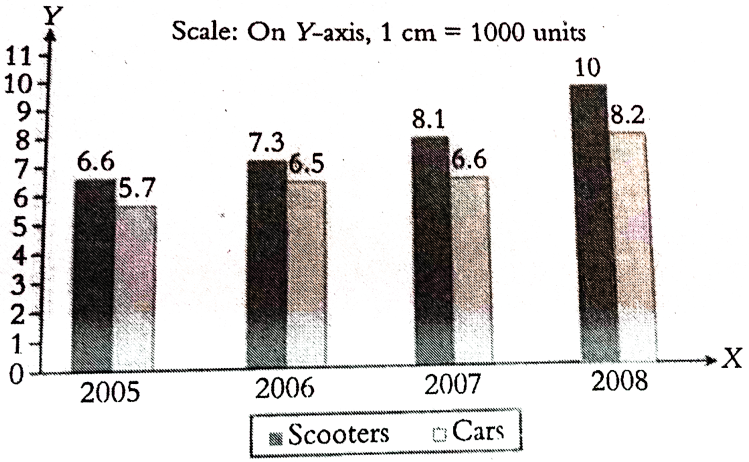


26.

Find the total number of scooters sold in the four years.

A. 26000

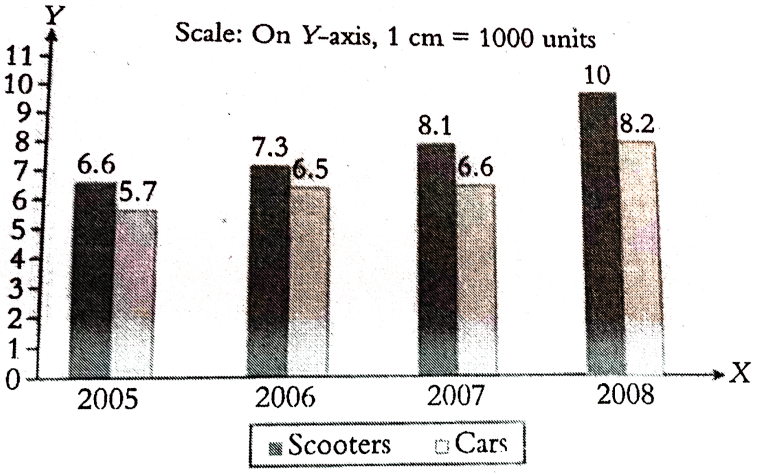
B. 27000

C. 31000

D. 32000

Answer: D

Watch Video Solution



27.

Find the ratio between the total number of vehicles sold (scooters and cars) in the year 2006 and that in the year 2008.

A. $41:46$

B. $69:91$

C. $147:182$

D. $46:49$

Answer: B

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28. There are 10 cards numbered from 1 to 10 in a box. If a card is drawn randomly, then find the probability of getting an even numbered card.

A. $\frac{1}{10}$

B. $\frac{1}{5}$

C. $\frac{2}{5}$

D. $\frac{1}{2}$

Answer: D

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29. The mode of the data 48, 45, 49, 51, 46, 48, 47, 49, 48, and 51 is _____.

A. 47

B. 49

C. 51

D. 48

Answer: D

Watch Video Solution

30. When a dice is rooled, find the probability of getting an even prime number.

A. $\frac{1}{6}$

B. $\frac{1}{3}$

C. $\frac{1}{2}$

D. $\frac{5}{6}$

Answer: A

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31. The range of 12 observations is 60. If the least observation is 90, then find the greatest observation.

A. 130

B. 140

C. 150

D. 160

Answer: C

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32. Find the median of the data 35, 28, 49, 56, 79, 81, 73 and 80.

A. 64.5

B. 65

C. 65.5

D. 66

Answer: A

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33. There are 20 marbles in a box which are marked with distinct numbers from 1 to 20. If a marble is drawn, then find the probability that the marble being numbered as a multiple of 5.

A. $3/5$

B. $2/5$

C. $1/5$

D. $4/5$

Answer: C

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34. The mode of the data 35, 25, 26, 33, 31, x, and 30 is 26, then x is _____.

A. 25

B. 26

C. 31

D. 33

Answer: B

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35. The median of the data 18, 42, 31, 25, 26, 38 and 43 is _____.

A. 31

B. 26

C. 25

D. 18

Answer: A

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36. The sum of 20 observation is 500, then the mean is _____.

A. 15

B. 20

C. 25

D. 30

Answer: C

Watch Video Solution

37. There are 100 cards numbered from 1 to 100 in a box. If a card is drawn from the box and the probability of an event is 1/2, then the number of favourable cases to the event is _____.

A. 20

B. 25

C. 40

D. 50

Answer: D

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Short Answer Type

1. Find the mean of 4, 6, 7, 9 and 4.

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2. Find the median of the data 9, 12, 11, 10, 8, 9, 11.

A. 9

B. 10

C. 11

D. 12

Answer: B

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3. Find the mode of the data 7, 8, 9, 9, 10, 7, 11, 10, 7, 6.

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4. Find the range of the data : 14, 15, 16, 18, 19, 25, 30, 41, 26, 16, 13, 18, 20 and 26.

A. 16

B. 10

C. 13

D. 28

Answer: D

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5. When a coin is flipped once, what is the probability of getting HEAD ?

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6. What is a pie chart ?

Watch Video Solution

7. The marks obtained by 15 students in an examination are given below : 40, 20, 24, 19,20, 35, 12, 48, 29, 40, 45, 48, 42, 23, 35. Find the average mark of the students.

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8. The heights of 7 students are given below (in cm) : 120, 126, 132.41, 121.52, 120.35, 132, 125. Find the median height of the students.

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9. The mode of the data 20, 23, 22, 23, 22, 20, x, 21 is 22. Find the value of x.

Watch Video Solution

10. The arithmetic mean of 10 observations is 45. If one of the obsservations, 54, is deleted, then find the mean of the remaining observations.

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11. If the mean of 4, x, and y is 6, then find the mean of x, y, and 10.

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12. A bar graph is drawn to the scale $1cm = 4 \times x$ units .The length of the bar representing a quantity 1000 units is $1.25cm$. Find x

Watch Video Solution

13. In a pie chart, a component is represented as a sector with sector angle 108°, then find the percentage of the value the component totally.

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14. If the mean of 2,3, x ,7 ,8 is x, then find the value of x .

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15. Anand's income and expenditure are in the ratio 9 : 5. Find the central angle of the sector, which represents Anand's savings.

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16. In a bar graph, a bar of length 8.6 cm is represented by 430 units. Find the length of another bar, which is represented by 340 units.

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17. Find the mode of the data 2, 4, 6, 4, 6, 7, 6, 7 and 8.

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18. The mean height of a group of 30 students is 150 cm. If a 150 cm tall student is included in the group, then find the mean heigh of the new group.

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19. The mean of observations 2, 3, 4, 5, 8, 14, and x is x. Find x.

A. 6

B. 7

C. 8

D. 9

Answer: A

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20. In a box, there are 20 marbles. Each marble is marked with a distinct number from 1 to 20. Find the probability of drawing a marble from the box which is marked with a number that is a perfect square.

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21. Find the mean of the data 7, 8, 10, 13, 17, 23, 30, 38, 47, and 57.

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Essay Type

1. Find the central angles of the components of a data given below, when represented in a pie chart ?

Component	Food	Education	Rent	Clothing	Sa
Expenses (in Rs.)	3600	2400	2100	1200	

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2. For the information given in the above question, find the heights of the bars, when the data represente in a bar graph : Scale of the graph : 1 cm = Rs. 500.

View Text Solution

3. The percentage of marks obtained by a student in various exams is given below. Represent the data by a line graph.

Name of the exam	UT-1	UT-1	Quartely	UT-3	Half yearly	UT-4	Annual
Percentage of marks	50	85	60	80	68	75	70

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4. The following table shows the favourite games of 240 students of a school. Draw a pie chart for the following data.

Game	Football	Badminton	Criket	Volleyball	Hockey
Number of students	35	30	80	40	55

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5. The following table gives the average temperatures, during the year 2006 and 2007. Draw a double bar graph for the given data.

Month	Jan	Feb	Mar	Apr	May	Jun	July	Aug	Sep	Oct	Nov	Dec
Temp (in °C) 2006	20	32	36	38	42	35	32	30	28	25	20	15
Temp (in °C) 2007	20	30	40	40	40	35	30	30	25	20	18	15

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6. In a pie chart, the central angles of two components A and B are 108° and 81°, rspectively. Find the difference in the presentages that A forms of the total value of all components and that B forms of the total value of all components (in %).

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Concept Application Level 1

1. If the mean of n observations is 12 and the sum of the observations is 132, then find the value of n.

A. 9

B. 10

C. 11

D. 12

Answer: C

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2. The range of the data 14, 15, 18, 25, 11, 40, 36, 30 is _____.

A. 29

B. 27

C. 24

D. 26

Answer: A

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3. The median of 5, 7, 9, 10, 11 is _____.

A. 7

B. 9

C. 11

D. 10

Answer: B

Watch Video Solution

4. In a pie chart, the sum of the angles of all its components is _____.

A. 90°

B. 180°

C. 240°

D. 360°

Answer: D

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5. In a bar graph, the height of a bar is proportional to the _____.

A. width of the bar

B. range of the data

C. value of the component

D. number of observations in the data

Answer: C

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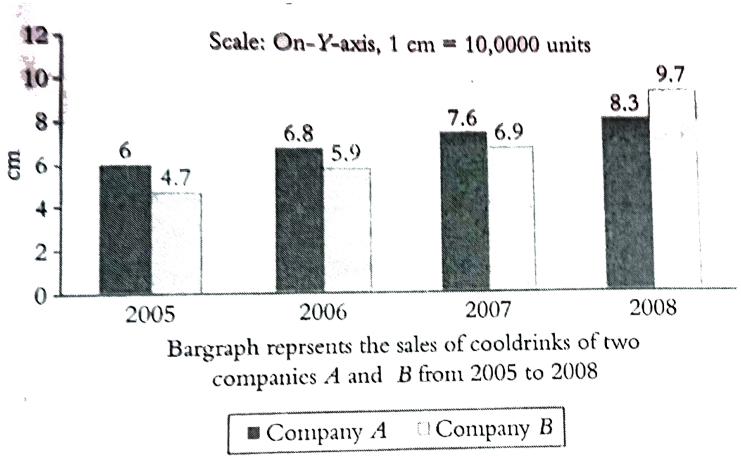

Bargraph reprsents the sales of cooldrinks of two companies A and B from 2005 to 2008

6.

In which year is the difference between the sales of A and the sales of B the highest ?

A. 2008

B. 2005

C. 2006

D. 2007

Answer: A

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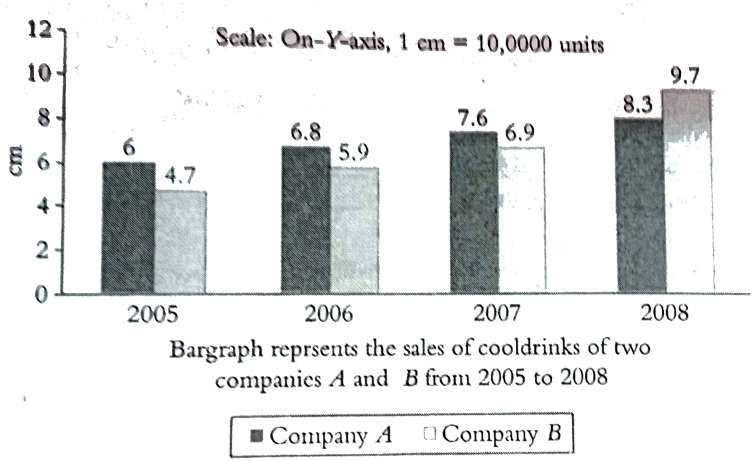

Bargraph reprsents the sales of cooldrinks of two companies A and B from 2005 to 2008

7.

Total sales of A and B in the year 2006 is _____.

A. 11,60,000

B. 12,70,000

C. 13,80,000

D. 14,90,000

Answer: B

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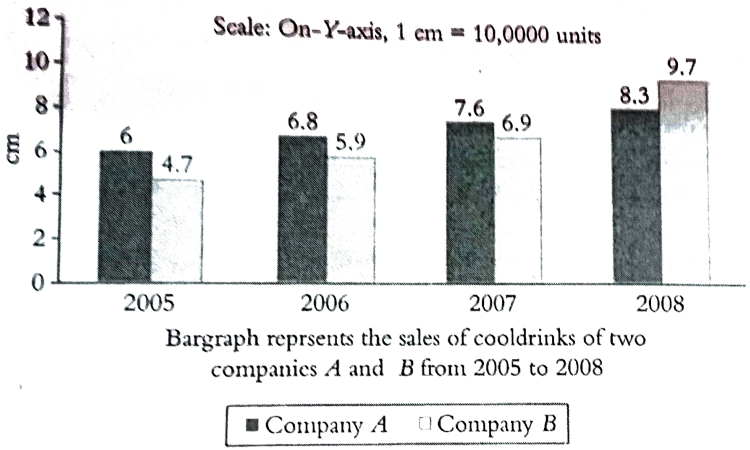

Bargraph reprsents the sales of cooldrinks of two companies A and B from 2005 to 2008

8.

Find the minimum difference between the sales of A and sales of B in any year in the given period.

A. 90000

B. 70000

C. 50000

D. 30000

Answer: B

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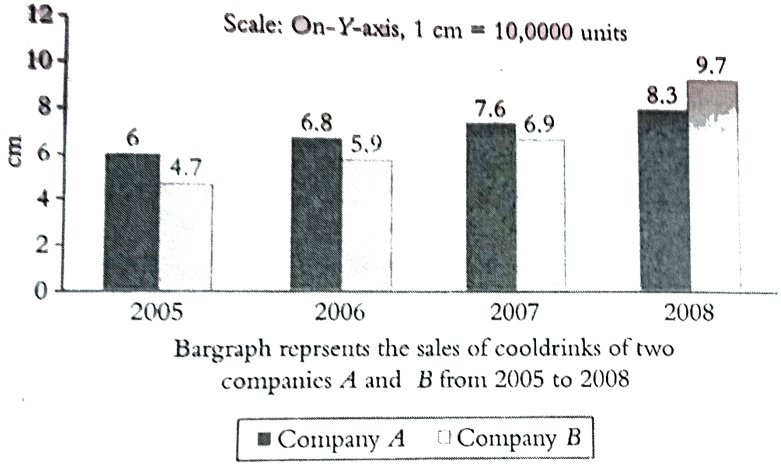

Bargraph reprsents the sales of cooldrinks of two companies A and B from 2005 to 2008

9.

In which year is the sales of B more than the sales of A ?

A. 2005

B. 2006

C. 2007

D. 2008

Answer: D

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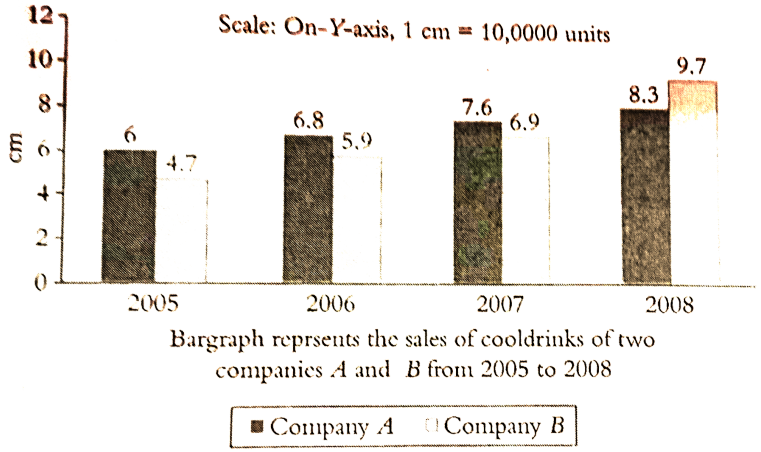


Bargraph reprsents the sales of cooldrinks of two companies A and B from 2005 to 2008

10.

Find the ratio of the total sales in the year 2007 and that in 2008.

A. $107:145$

B. $127:145$

C. $29:36$

D. $107:127$

Answer: C

Watch Video Solution

11. When a dice is thrown, the total number of posible outcomes is _____.

A. 6

B. 1

C. 3

D. 4

Answer: A

Watch Video Solution

12. The arithmetic mean of 13 observations is 60. If one of the observation 50 is deleted and another observation 63 is included. Find the new arithmetic mean. The following steps are involved in solving the above problem. Arrange them in sequential order.

(A) New sum of observations $= 780 - 50 + 63 = 793$

(B) The sum of the observation $= 13 \times 60 = 780$

(C) $\therefore$ New arithmetic mean $= \frac{793}{13}$

(D) The required mean $= 61$

A. BACD

B. BCAD

C. BDCA

D. ABCD

Answer: A

Watch Video Solution

13. If a dice is rolled, then find the probability of getting a composite number.

The following steps are involved in solving the above problem. Arrange them in sequential order.

(A) The possible composite number when a dice is rolled are 4 and 6. When a dice is rolled, the possible outcomes are 1, 2, 3, 4, 5, 6.

(B) The required probability $= \frac{1}{3}$

(C) The probability of getting a composite number $= \frac{\text{Number of favourable outcomes}}{\text{Total number of outcomes}} = \frac{2}{6}$

A. ABC

B. CBA

C. CAB

D. ACB

Answer: D

Watch Video Solution

14. Match the following Column A to Column B

Column A	Column B
The mode of the data 3, 4, 9, 7, 8, 9, 3, 9, 8 is _____.	(a) 17
The median of the data 15, 13, 12, 17, 20, 24, 11 is _____.	(b) 15
The mean of the data 22, 16, 15, 23, 13, 12, 18 is _____.	(c) $\frac{1}{26}$
The probability of getting a red card from a well shuffled pack of cards is _____.	(d) 9
	(e) $\frac{1}{2}$
	(f) 3

Watch Video Solution

Level 2

1. In a pie chart, the central angle of a components is 72° and its value is 24. Find the total value of all the components of the data.

A. 240

B. 120

C. 360

D. 420

Answer: B

Watch Video Solution

2. In a bar graph, the height of a bar is 5 cm and it represents 40 units. Find the height of a bar representing 56 units (in cm).

A. 11.2

B. 5.6

C. 7

D. 8

Answer: C

Watch Video Solution

3. In a pictograph, each picture represents 1000 units of certain production in a ceratin year. There are 4 full pictures and $(3/4)$ the of a picture in a row. Find the number of units produced in that year.

A. 4340

B. 4750

C. 4250

D. 4725

Answer: B

Watch Video Solution

4. The mean of a data is 15 and the sum of the observations is 195. Find the number of observations in the data.

A. 13

B. 19

C. 16

D. 17

Answer: A

Watch Video Solution

5. If the mode of 22, 21, 23, 24, 21, 20, 23, 26, x and 26 is 23, then x is _____.

A. 20

B. 21

C. 23

D. 24

Answer: C

Watch Video Solution

6. If the range of 10 observations is 15 and its highest scrore is 28, then the least scrore of the data is _____.

A. 3

B. 13

C. 14

D. 5

Answer: B

Watch Video Solution

7. The mean of the data 15, 20, 20, 16, 22, 17, 23, 18, 24, 25 is _____.

A. 26

B. 22

C. 20

D. 18

Answer: C

Watch Video Solution

8. If an unbiased dice is rolled, then the probability of getting an even number is _____ then/to that of getting an odd number.

A. More

B. Less

C. Equal

D. Cannot say

Answer: C

Watch Video Solution

9. In a class of 15 students, the total marks obtained by all the students in a test is 600. Find the average mark of the class.

A. 35

B. 30

C. 45

D. 40

Answer: D

Watch Video Solution

10. If the mean of 5, 7, x, 10, 5, and 7 is 7, then find the value of x.

A. 6

B. 7

C. 8

D. 9

Answer: C

Watch Video Solution

11. There are 20 students in a class of them, the height of ten students is 150 cm each, the height of 6 students is 142 cm each and the height of 4 students is 132 cm each. Find the average height of all the students.

A. 144

B. 140

C. 138

D. 146

Answer: A

Watch Video Solution

12. Find the mean weight (in kg) of 50 boys of a class whose total weight is 1550 kg.

A. 30

B. 35

C. 32

D. 31

Answer: D

Watch Video Solution

13. In a pie chart, find the central angle of a component, which is 30% in the total value of all the components.

A. 108°

B. 30°

C. 70°

D. 120°

Answer: A

Watch Video Solution

14. If the central angle of a component is 72°, then find the percentage of the value of the component in the total value of all the components.

A. $70\ \%$

B. $18\ \%$

C. $24\ \%$

D. $20\ \%$

Answer: D

Watch Video Solution

15. The mean of p, q, and r is same as the mean of q, 2r, and s. then which of the following is correct ?

A. $p = q = r$

B. $q = r = s$

C. $q = r$

D. $p = r + s$

Answer: D

Watch Video Solution

16. A bar graph is drawn to the scale of 1 cm = 2m units. The length of the bar representing a quantity of 875 units is 1.75 cm. Find m.

A. 125

B. 225

C. 250

D. 375

Answer: C

Watch Video Solution

17. In a pie graph, a component is represented as a sector with sector angle 72°. Find the percentage of the component value in the total.

A. $21\ \%$

B. $27.5\ \%$

C. $22.5\ \%$

D. 20 %

Answer: D

Watch Video Solution

18. If the mean of 2, 4, p, 8, and 10 is p, then find the value of p?

A. 4

B. 5

C. 8

D. 6

Answer: D

Watch Video Solution

19. A person contributed his total salary of a month for three social welfare societis A, B and C. The ratio of total salary, share of A, and share of B is 20 : 5 : 8. Find the central angle of sector, which represents the share of C.

A. $72\frac{1^\circ}{2}$

B. 126°

C. 105°

D. $67\frac{1^\circ}{2}$

Answer: B

Watch Video Solution

20. In a pictograph, a picture is represented by 375 units. If the data is represented by 30 pictures, then find the total numbers of units in the data.

A. 12.5

B. 11250

C. 37.5

D. 12750

Answer: B

Watch Video Solution

21. The mean weight of 21 students is 21 kg. If a student weighing 21 kg is removed from the group, then what is the mean weight of the remaining students ?

A. 20 kg

B. 21 kg

C. 19 kg

D. 22 kg

Answer: B

Watch Video Solution

22. The mean of 10, 15, 19, 30, 43, 69, and x is x. Find the median of the data.

A. 19

B. 43

C. 30

D. None of these

Answer: C

Watch Video Solution

Level 3

1. In factory, the daily wages (in Rs.) of 12 works are 75, 90 100, 120, 110, 114, 50, 60, 70, 105, 108, and 102. find the number of workers whose daily wage is less than the mean daily wage.

A. 5

B. 6

C. 4

D. 7

Answer: A

Watch Video Solution

2. If the mean of 9, 10, 15, x, 6, 8, and 12 is 11, then the median of the scores.

A. 4

B. 10

C. 13

D. 5

Answer: B

Watch Video Solution

3. The mode of the data 9, x, 6, 3, 4, 9, 8, 6, 4, 6, is 6. which of the following cannot be the value of x ?

A. 8

B. 7

C. 6

D. 9

Answer: D

Watch Video Solution

4. The median, mode , and mean of a data is 9, if there are five integers in the data and the range of the data is 4. If the least value of the data is 7, then find the number of different observations in the data.

A. 3

B. 4

C. 2

D. 5

Answer: A

Watch Video Solution

5. The median of 10, 12, x, 6, 18 is 10. Then which of the following is true about the value of x ?

A. $6 \leq x \leq 10$

B. $x < 6$

C. $x > 18$

D. Cannot say

Answer: D

Watch Video Solution

6. The mean of 10 observation is 15. If one observation 15 is added, then find the new mean.

A. 16

B. 11

C. 15

D. 10

Answer: C

Watch Video Solution

7. The range of the data 15, 18, 17, 16, 14, x, 12, 10, 9, 15 is 9. Which of the following is true about x ?

A. $x > 18$

B. $x < 9$

C. $9 \leq x \leq 18$

D. $9 < x < 18$

Answer: C

Watch Video Solution

8. The range of a data is x, the median and the mode of the data is 7 each. If the number of observations is odd and all observations are integers, then find the least value of x $(\text{tange} \quad \neq 0)$

A. 1

B. 2

C. 3

D. 4

Answer: A

Watch Video Solution

9. For a pie chart, a studen t calculates the central angle of a component as 72° by taking the total value as 220 instead of 240. Find the correct central angle of the component.

A. 60°

B. 66°

C. 74°

D. 80°

Answer: B

Watch Video Solution

10. In a bar graph, length of a bar is 6.4 cm and it represents 256 units. Find the number of units represented by a bar of length 5.3 cm.

A. 228

B. 196

C. 212

D. 224

Answer: C

Watch Video Solution

11. A bag contains 4 green balls, 4 red balls, and 2 blue bals. If a ball is drawn form the bag,then what is the probability of getting neither green not red ball ?

A. $2/5$

B. $1/2$

C. $4/5$

D. $1/5$

Answer: D

Watch Video Solution

Test Your Concepts Very Short Answer Type Questions

1. Directions for questions : Fill in the blanks

If the range of a data is 26 and its highest value is 37, then its least value is _____.

Watch Video Solution

2. Directions for questions : State whether the following statements are true or false.

The mean of the observations 9, 7, 11, 13, 2, 4, 5, 5 is 7.

Watch Video Solution

3. Directions for questions : State whether the following statements are true or false.

The median of the data 47, 41, 52, 43, 56, 35, 49, 55, 42 is 47.

Watch Video Solution

4. the mode of the data 8, 4, 5, 3, 6, 7, 7, 8, 4, 6, 8, 9 and 9 is___.

Watch Video Solution

5. Directions for questions : State whether the following statements are true or false.

For an unbiased dice, the probability of getting 4 is 1/6.

Watch Video Solution

6. Directions for questions : Fill in the blanks.

The mean of 41, 25, 15, 42, and 5 is _____ .

Watch Video Solution

7. In a pie chart, the central angle for a component value of 240, when the total value is 720, is _____.

Watch Video Solution

8. In a bar graph, the height of a bar is 5.2 cm. If 1 cm=80 units, then the value represented by the bar is _____ units.

Watch Video Solution

9. Directions for questions : Fill in the blanks.

The range of the data 108, 107, 105, 106, 107, 104, 103, 101, 104 is _____ .

Watch Video Solution

10. Directions for questions : Fill in the blanks.

If the sum of 6 observations is 72, then their mean is _____ .

Watch Video Solution

11. Directions for questions : Fill in the blanks.

In a pictograph, if 1 picture = 25 boys, then 175 boys are represented by ___ pictures.

Watch Video Solution

12. Directions for questions : Fill in the blanks.

The median of the data 27, 39, 49, 20, 21, 28, 38 is _____ .

Watch Video Solution

13. Directions for questions : Fill in the blanks.

If a dice is rolled, then the probability of getting a multiple of 2 is _____

.

Watch Video Solution

14. Directions for questions : Fill in the blanks.

When a dice is rolled, the probability of getting a natural number is ___ .

Watch Video Solution

15. Directions for questions : Fill in the blanks.

The minimum value of the probability of an event is _____ .

Watch Video Solution

16. Directions for questions : Fill in the blanks.

When a card is picked from a deck, the probability of getting a face card is

___

Watch Video Solution

17. The middle value of a data, when it is arranged in ascending or descending, is called _____.

Watch Video Solution

18. Directions for questions : Fill in the blanks.

The definition of frequency of an observation is _____ .

Watch Video Solution

19. Equally Likely Events

Watch Video Solution

20. Directions for questions : Fill in the blanks.

If a dice is thrown, then the probability of getting a 7 is_____ .

Watch Video Solution

21. The mode of a data is _____.

Watch Video Solution

22. The central angle of a component in a pie chart is _____.

Watch Video Solution

23. Directions for questions : Fill in the blanks.

The graphs drawn for representing a data using pictures is _____ .

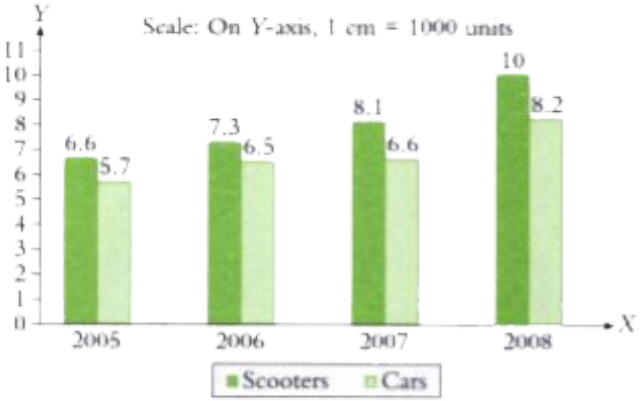
Watch Video Solution

24. Directions for questions : Fill in the blanks.

When two coins are tossed, the outcomes are _____ .

Watch Video Solution

25. Directions for questions : These questions are based on the following data. Read the following bar graph and answer the following.



In which year is the difference between the sales of the scooters and the sales of cars the least?

A. 2005

B. 2006

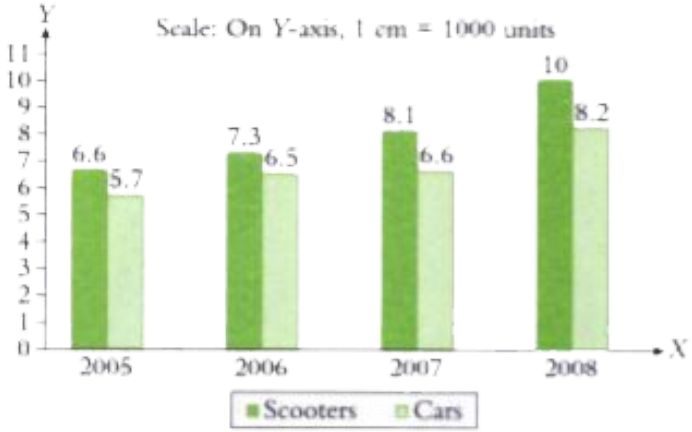
C. 2007

D. 2008

Answer: B

Watch Video Solution

26. Directions for questions : These questions are based on the following data. Read the following bar graph and answer the following.



Total number of vehicles (scooters and cars) sold in the years 2005 and 2006 is _____ .

A. 26, 100

B. 28, 500

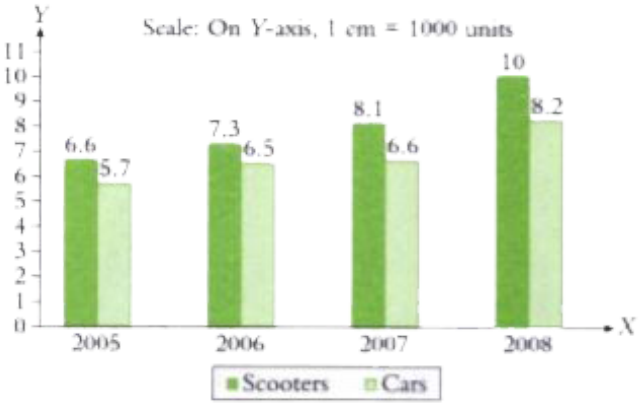
C. 25, 100

D. 27, 500

Answer: A

Watch Video Solution

27. Directions for questions : These questions are based on the following data. Read the following bar graph and answer the following.



Find the maximum difference between sales of scooters and that of cars, in any year, in the given period.

A. 1500

B. 1700

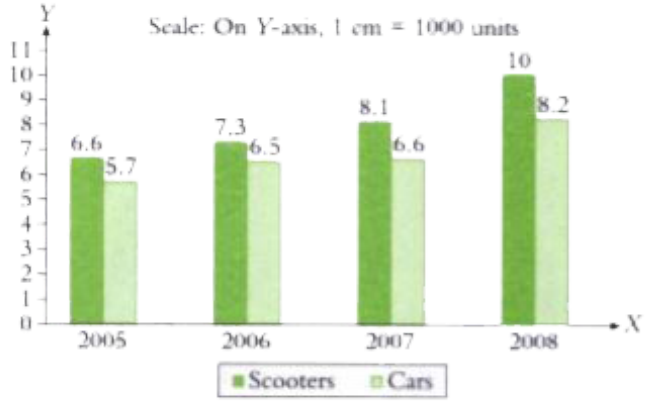
C. 1800

D. 2000

Answer: C

Watch Video Solution

28. Directions for questions : These questions are based on the following data. Read the following bar graph and answer the following.



Find the total number of scooters sold in the four years.

A. 26000

B. 27000

C. 31000

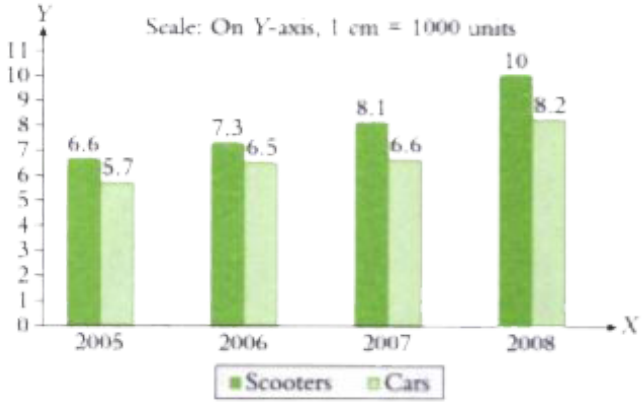
D. 32000

Answer: D

Watch Video Solution

Watch Video Solution

29. Directions for questions : These questions are based on the following data. Read the following bar graph and answer the following.



Find the ratio between the total number of vehicles sold (scooters and cars) in the year 2006 and that in the year 2008.

A. $41:46$

B. $69:91$

C. $147:182$

D. $46:49$

Answer: B

Watch Video Solution

30. There are 10 cards numbered from 1 to 10 in a box. If a card is drawn randomly, then find the probability of getting a prime numbered card.

Watch Video Solution

31. The mode of the data 48, 45, 49, 51, 46, 48, 47, 49, 48, and 51 is _____.

A. 47

B. 49

C. 51

D. 48

Answer: D

Watch Video Solution

32. When a dice is rolled, find the probability of getting 4.

A. $\frac{1}{6}$

B. $\frac{1}{3}$

C. $\frac{1}{2}$

D. $\frac{5}{6}$

Answer: A

Watch Video Solution

33. The range of 12 observations is 60. If the least observation is 90, then find the greatest observation.

A. 130

B. 140

C. 150

D. 160

Answer: C

Watch Video Solution

34. Find the median of the data 35, 28, 49, 56, 79, 81, 73 and 80.

A. 64.5

B. 65

C. 65.5

D. 66

Answer: A

Watch Video Solution

35. There are 20 marbles in a box which are marked with distinct numbers from 1 to 20. If a marble is drawn, then find the probability that the marble being numbered as a multiple of 4.

A. $3/5$

B. $2/5$

C. $1/4$

D. $4/5$

Answer: C

Watch Video Solution

36. The mode of the data 35, 25, 26, 33, 31, x, and 30 is 26, then x is _____.

A. 25

B. 26

C. 31

D. 33

Answer: B

Watch Video Solution

37. The median of the data 18, 42, 31, 25, 26, 38 and 43 is _____.

A. 31

B. 26

C. 25

D. 18

Answer: A

Watch Video Solution

38. The sum of 200 observations is 14000, then the mean is_____ .

A. 150

B. 120

C. 70

D. 60

Answer: C

Watch Video Solution

39. There are 100 cards numbered from 1 to 100 in a box. If a card is drawn from the box and the probability of an event is 1/2, then the number of favourable cases to the event is _____.

A. 20

B. 25

C. 40

D. 50

Answer: D

Watch Video Solution

Test Your Concepts Short Answer Type Questions

1. Find the mean of 11, 15, 17, 6, and 21.

Watch Video Solution

2. Find the median of the data 9, 4,2,11,9,3,12,1,6.

Watch Video Solution

3. Find the mode of the data 7, 8, 9, 9, 10, 7, 11, 10, 7, 6.

Watch Video Solution

4. Find the range of the data: $535, 155, 305, 720, 315, \text{ and } 214$

Watch Video Solution

5. When two coins are flipped once, what is the probability of getting head-tail ?

Watch Video Solution

6. What is a pie chart ?

Watch Video Solution

7. The marks obtained by 15 students in an examination are given below : 40, 20, 24, 19,20, 35, 12, 48, 29, 40, 45, 48, 42, 23, 35. Find the average mark of the students.

Watch Video Solution

8. The heights of 7 students are given below (in cm) : 120, 126, 132.41, 121.52, 120.35, 132, 125. Find the median height of the students.

Watch Video Solution

9. The mode of the data 20, 23, 22, 23, 22, 20, x, 21 is 22. Find the value of x.

Watch Video Solution

10. The arithmetic mean of 10 observations is 45. If one of the obsservations, 54, is deleted, then find the mean of the remaining observations.

Watch Video Solution

11. If the mean of 4, x, and y is 6, then find the mean of x, y, and 10.

Watch Video Solution

12. A bar graph is drawn to the scale 1 cm = 4x units .The length of the bar represeting a quantity 1000 units is 1.25 cm . Find x

Watch Video Solution

13. In a pie chart, a component is represented as a sector with sector angle 108°, then find the percentage of the value the component totally.

Watch Video Solution

14. If the mean of 2,3, x ,7 ,8 is x, then find the value of x .

Watch Video Solution

15. Anand's income and expenditure are in the ratio 9 : 5. Find the central angle of the sector, which represents Anand's savings.

Watch Video Solution

16. In a bar graph, a bar of length 8.6 cm is represented by 430 units. Find the length of another bar, which is represented by 340 units.

Watch Video Solution

17. Find the mode of the data 2, 4, 6, 4, 6, 7, 6, 7, aud 8

Watch Video Solution

18. The mean height of a group of 30 students is 150 cm. If a 150 cm tall student is included in the group, then find the mean heigh of the new group.

Watch Video Solution

19. The mean of observations 2, 3, 4, 5, 8, 14, and x is x. Find x.

Watch Video Solution

20. In a box, there are 20 marbles. Each marble is marked with a distinct number from 1 to 20. Find the probability of drawing a marble from the box which is marked with a number that is a prime number.

Watch Video Solution

21. Find the mean of the data 42,20,24,31,30 and 57.

Watch Video Solution

Test Your Concepts Essay Type Questions

1. For the information given in the above question, find the heights of the bars, when the data represented in a bar graph: Scale of the graph: 1 cm = Rs 500.

View Text Solution

2. The following table gives the average temperatures, during the year 2006 and 2007. Draw a double bar graph for the given data.

Month	Jan	Feb	Mar	Apr	May	Jun	July	Aug	Sep	Oct	Nov	Dec
Temp (in °C) 2006	20	32	36	38	42	35	32	30	28	25	20	15
Temp (in °C) 2007	20	30	40	40	40	35	30	30	25	20	18	15

Watch Video Solution

3. In a pie chart, the central angles of two components A and B are 108^{o} and 81^{o}, respectively. Find the difference in the percentages that A forms of the total value of all components and that B forms of the total value of all components (in %).

View Text Solution

Concept Application Level 1

1. Directions for questions : State whether true or false given options.

The mean of 11 observations is 12 and the sum of the observations is 132.

Watch Video Solution

2. The range of the data 14, 15, 18, 25, 11, 40, 36, 30 is _____.

A. 29

B. 27

C. 24

D. 26

Answer: A

Watch Video Solution

3. The median of 5, 7, 9, 10, 11 is _____.

A. 7

B. 9

C. 11

D. 10

Answer: B

Watch Video Solution

4. In a pie chart, the sum of the angles of all its components is _____.

A. 90°

B. 180°

C. 240°

D. 360°

Answer: D

Watch Video Solution

5. In a bar graph, the height of a bar is proportional to the _____.

A. width of the bar

B. range of the data

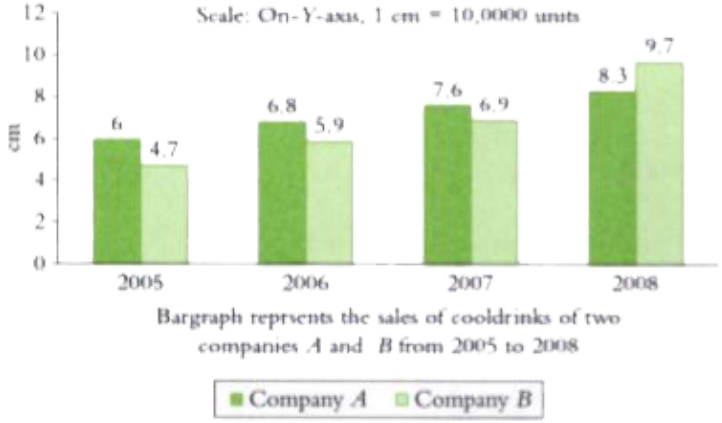
C. value of the component

D. number of observations in the data

Answer: C

Watch Video Solution

6. Directions for questions : These questions are based on the following data. Read the following bar graph and answer the questions.



Bargraph reprsents the sales of cooldrinks of two companies A and B from 2005 to 2008

In year 2007 what is the difference between the sales of A and the sales of B ?

A. 70,000

B. 72,000

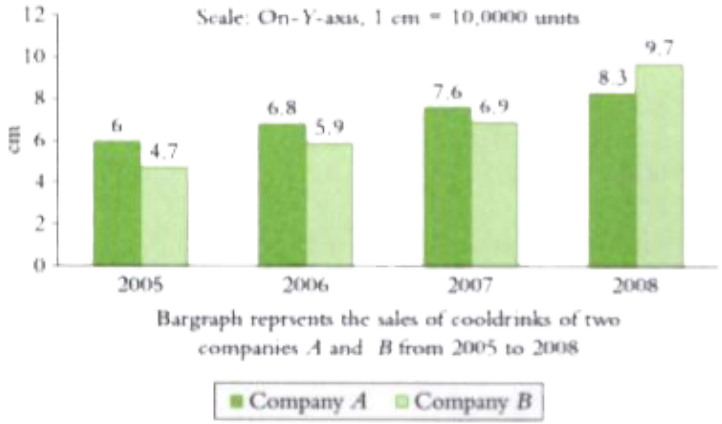
C. 69,400

D. 77,540

Answer: A

Watch Video Solution

7. Directions for questions : These questions are based on the following data. Read the following bar graph and answer the questions.



Bargraph reprsents the sales of cooldrinks of two companies *A* and *B* from 2005 to 2008

Total sales of A and B in the year 2006 is _____ .

A. 11,60,000

B. 12,70,000

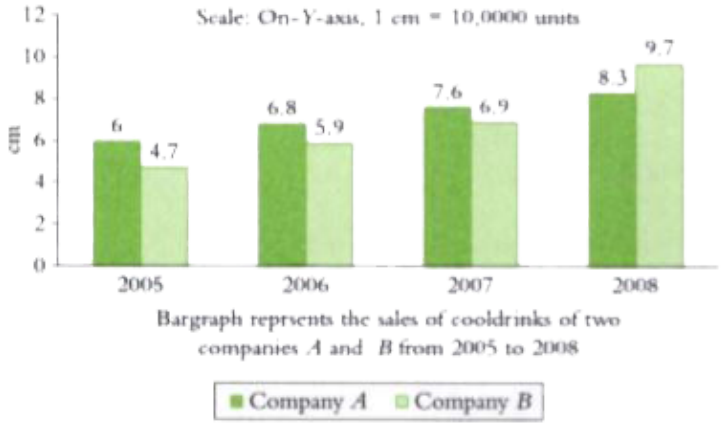
C. 13,80,000

D. 14,90,000

Answer: B

Watch Video Solution

8. Directions for questions : These questions are based on the following data. Read the following bar graph and answer the questions.



Bargraph reprsents the sales of cooldrinks of two companies A and B from 2005 to 2008

Find the maximum difference between the sales of A and sales of B in any year in the given period.

A. 170000

B. 140000

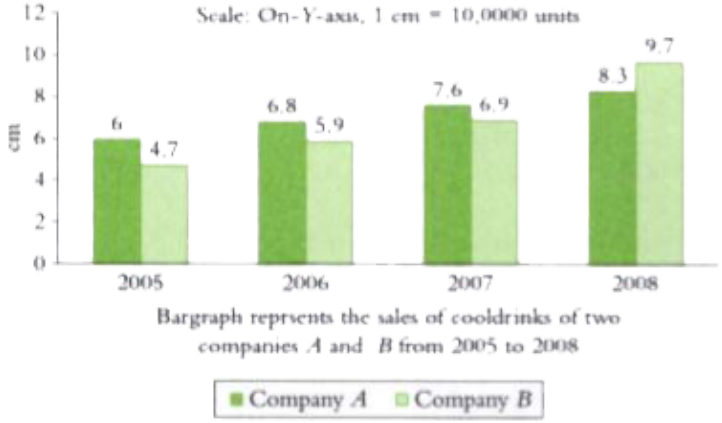
C. 50000

D. 300000

Answer: B

Watch Video Solution

9. Directions for questions : These questions are based on the following data. Read the following bar graph and answer the questions.



Bargraph reprsents the sales of cooldrinks of two companies A and B from 2005 to 2008

In which year is the sales of B more than the sales of A?

A. 2005

B. 2006

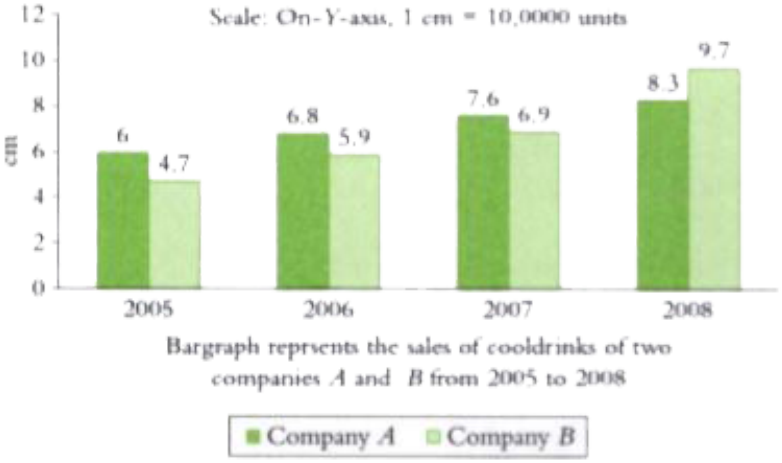
C. 2007

D. 2008

Answer: D

Watch Video Solution

10. Directions for questions : These questions are based on the following data. Read the following bar graph and answer the questions.



Bargraph reprsents the sales of cooldrinks of two companies A and B from 2005 to 2008

Find the ratio of the total sales in the year 2007 and that in 2008.

A. $107:145$

B. $127:145$

C. $29:36$

D. $107:127$

Answer: C

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11. When a dice is thrown, the total number of posible outcomes is _____.

A. 6

B. 1

C. 3

D. 4

Answer: A

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12. The arithmetic mean of 13 observations is 60. If one of the observation 50 is deleted and another observation 63 is included. Find the new arithmetic mean. The following steps are involved in solving the above problem. Arrange them in sequential order.

(A) New sum of observations $= 780 - 50 + 63 = 793$

(B) The sum of the observation $= 13 \times 60 = 780$

(C) $\therefore$ New arithmetic mean $= \frac{793}{13}$

(D) The required mean $= 61$

A. BACD

B. BCAD

C. BDCA

D. ABCD

Answer: A

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13. If a dice is rolled, then find the probability of getting a composite number.

The following steps are involved in solving the above problem. Arrange them in sequential order.

(A) The possible composite number when a dice is rolled are 4 and 6. When a dice is rolled, the possible outcomes are 1, 2, 3, 4, 5, 6.

(B) The required probability $= \frac{1}{3}$

(C) The probability of getting a composite number $= \frac{\text{Number of favourable outcomes}}{\text{Total number of outcomes}} = \frac{2}{6}$

A. ABC

B. CBA

C. CAB

D. ACB

Answer: D

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Concept Application Level 2

1. In a pie chart, the central angle of a components is 72° and its value is 24. Find the total value of all the components of the data.

A. 240

B. 120

C. 360

D. 420

Answer: B

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2. In a bar graph, the height of a bar is 5 cm and it represents 40 units. Find the height of a bar representing 56 units (in cm).

A. 11.2

B. 5.6

C. 7

D. 8

Answer: C

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3. In a pictograph, each picture represents 1000 units of certain production in a ceratin year. There are 4 full pictures and $(3/4)$ the of a picture in a row. Find the number of units produced in that year.

A. 4340

B. 4750

C. 4250

D. 4725

Answer: B

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4. The mean of a data is 15 and the sum of the observations is 195. Find the number of observations in the data.

A. 13

B. 19

C. 16

D. 17

Answer: A

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5. If the mode of 22, 21, 23, 24, 21, 20, 23, 26, x and 26 is 23, then x is _____.

A. 20

B. 21

C. 23

D. 24

Answer: C

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6. If the range of 10 observations is 15 and its highest scrore is 28, then the least scrore of the data is _____.

A. 3

B. 13

C. 14

D. 5

Answer: B

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7. The mean of the data 15, 20, 20, 16, 22, 17, 23, 18, 24, 25 is _____.

A. 26

B. 22

C. 20

D. 18

Answer: C

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8. If an unbiased dice is rolled, then the probability of getting an even number is _____ then/to that of getting an odd number.

A. More

B. Less

C. Equal

D. Cannot say

Answer: C

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9. In a class of 15 students, the total marks obtained by all the students in a test is 600. Find the average mark of the class.

A. 35

B. 30

C. 45

D. 40

Answer: D

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10. If the mean of 5, 7, x, 10, 5, and 7 is 7, then find the value of x.

A. 6

B. 7

C. 8

D. 9

Answer: C

Watch Video Solution

11. There are 20 students in a class of them, the height of ten students is 150 cm each, the height of 6 students is 142 cm each and the height of 4 students is 132 cm each. Find the average height of all the students.

A. 144

B. 140

C. 138

D. 146

Answer: A

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12. Find the mean weight (in kg) of 50 boys of a class whose total weight is 1550 kg.

A. 30

B. 35

C. 32

D. 31

Answer: D

Watch Video Solution

13. In a pie chart, find the central angle of a component, which is 30% in the total value of all the components.

A. 108°

B. 30°

C. 70°

D. 120°

Answer: A

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14. If the central angle of a component is 72°, then find the percentage of the value of the component in the total value of all the components.

A. $70\ \%$

B. $18\ \%$

C. $24\ \%$

D. $20\ \%$

Answer: D

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15. The mean of p, q, and r is same as the mean of q, 2r, and s. then which of the following is correct ?

A. $p = q = r$

B. $q = r = s$

C. $q = r$

D. $p = r + s$

Answer: D

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16. A bar graph is drawn to the scale of 1 cm = 2m units. The length of the bar representing a quantity of 875 units is 1.75 cm. Find m.

A. 125

B. 225

C. 250

D. 375

Answer: C

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17. In a pie graph, a component is represented as a sector with sector angle 72°. Find the percentage of the component value in the total.

A. 0.21

B. 27.5%

C. 22.5%

D. $20\ \%$

Answer: D

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18. If the mean of 2, 4, p, 8, and 10 is p, then find the value of p?

A. 4

B. 5

C. 8

D. 6

Answer: D

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19. A person contributed his total salary of a month for three social welfare societis A, B and C. The ratio of total salary, share of A, and share of B is 20 : 5 : 8. Find the central angle of sector, which represents the share of C.

A. $72\frac{1^\circ}{2}$

B. 126°

C. 105°

D. $67\frac{1^\circ}{2}$

Answer: B

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20. In a pictograph, a picture is represented by 375 units. If the data is represented by 30 pictures, then find the total numbers of units in the data.

A. 12.5

B. 11250

C. 37.5

D. 12750

Answer: B

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21. The mean weight of 21 students is 21 kg. If a student weighing 21 kg is removed from the group, then what is the mean weight of the remaining students ?

A. 20 kg

B. 21 kg

C. 19 kg

D. 22 kg

Answer: B

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22. The mean of 10, 15, 19, 30, 43, 69, and x is x. Find the median of the data.

A. 19

B. 43

C. 30

D. None of these

Answer: C

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Concept Application Level 3

1. In factory, the daily wages (in Rs.) of 12 works are 75, 90 100, 120, 110, 114, 50, 60, 70, 105, 108, and 102. find the number of workers whose daily wage is less than the mean daily wage.

A. 5

B. 6

C. 4

D. 7

Answer: A

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2. If the mean of 9, 10, 15, x, 6, 8, and 12 is 11, then the median of the scores.

A. 4

B. 10

C. 13

D. 5

Answer: B

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3. The mode of the data 9, x, 6, 3, 4, 9, 8, 6, 4, 6, is 6. which of the following cannot be the value of x ?

A. 8

B. 7

C. 6

D. 9

Answer: D

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4. The median, mode , and mean of a data is 9, if there are five integers in the data and the range of the data is 4. If the least value of the data is 7, then find the number of different observations in the data.

A. 3

B. 4

C. 2

D. 5

Answer: A

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5. The median of 10, 12, x, 6, 18 is 10. Then which of the following is true about the value of x ?

A. $6 \leq x \leq 10$

B. $x < 6$

C. $x > 18$

D. Cannot say

Answer: D

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6. The mean of 10 observation is 15. If one observation 15 is added, then find the new mean.

A. 16

B. 11

C. 15

D. 10

Answer: C

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7. The range of the data 15, 18, 17, 16, 14, x, 12, 10, 9, 15 is 9. Which of the following is true about x ?

A. $x > 18$

B. $x < 9$

C. $9 \leq x \leq 18$

D. $9 \leq x \leq 18$

Answer: C

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8. The range of a data is x, the median and the mode of the data is 7 each. If the number of observations is odd and all observations are integers, then find the least value of x $(\tan ge \quad \neq 0)$

A. 1

B. 2

C. 3

D. 4

Answer: A

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9. For a pie chart, a studen t calculates the central angle of a component as 72° by taking the total value as 220 instead of 240. Find the correct central angle of the component.

A. 60°

B. 66°

C. 74°

D. 80°

Answer: B

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10. In a bar graph, length of a bar is 6.4 cm and it represents 256 units. Find the number of units represented by a bar of length 5.3 cm.

A. 228

B. 196

C. 212

D. 224

Answer: C

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11. A bag contains 4 green balls, 4 red balls, and 2 blue bals. If a ball is drawn form the bag,then what is the probability of getting neither green not red ball ?

A. $2/5$

B. $1/2$

C. $4/5$

D. $1/5$

Answer: D

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