MATHS

BOOKS - NCERT EXEMPLAR

DATA HANDLING

Examples Write The Correct Answer

1. The range of the data 14, 6, 12, 17, 21, 10, 4, 3 is

A. 21

B. 17

C. 18

D. 11

Answer: c

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2. The mode of the data 23, 26, 22, 29, 23, 29, 26, 29, 22, 23 is

A. 23 and 29

B. 23 only

C. 29 only

D. 26 only

Answer: a

3. The median of the data 40, 50, 99, 68, 98, 60, 94 is

A. 40

B. 60

C. 68

D. 99

Answer: c

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Examples Fill In The Blanks

1. Find the mean of first five prime numbers

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2. The probability of getting a number greater than 2 on throwing a die once is _____

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Examples True Or False

1. The mode of the observations 23, 26, 15, 12, 28, 38, 19, 23, 26, 23 is 28.

Size of Sweater	Number of Sweaters Sold
40	15
42	17
44	13
46	14
48	11
Total	70

2.

In the above table

(a) The most popular size is 17.

(b) 17 is the median for above data.

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3. Median of the data

4,5,9,2,6,8,7 is 2

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Examples

1. Find the median of the data:

3, 11, 7, 2, 5, 9, 9, 2, 10, 15, 7

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2. Find the median of the data :

21, 15, 6, 25, 18, 13, 20, 9, 8, 12

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3. The cards bearing letters of the word "MATHEMATICS" are placed in a bag. A card is taken out from the bag without looking into the bag (at random).

(a) How many outcomes are possible when a letter is taken out of the bag at random?

(b) What is the probability of getting

(i) M?

(ii) Any vowel?

(iii) Any consonant?

(iv) X?

4. If the mean of 26, 28, 25, x, 24 is 27, find the value of x

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5. The mean of 10 observations was calculated as 40. It was detected on rechecking that the value of 45 was wrongly copied as 15. Find the correct mean.
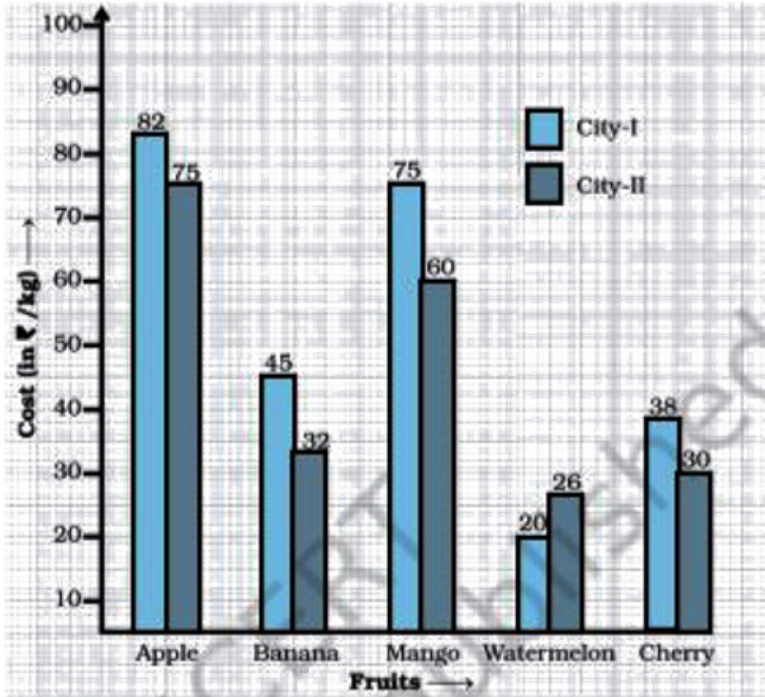
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6. The median of observations 11, 12, 14, 18, x+ 2, 20, 22, 25, 61 arranged in ascending order is 21. Find the value of x.

7. Study the double bar graph given below and answer the questions that follow:

Double bar graph showing Cost (in ₹/kg) for fruits in City-I and City-II.

Fruit	City-I	City-II
Apple	82	75
Banana	45	32
Mango	75	60
Watermelon	20	26
Cherry	38	30

(a) What information does the above double graph depict?

(b) Name the fruits for which cost of 1 kg is greater in City I as compared to City II.

(c) What is the difference of rates for apples in both the cities?

(d) Find the ratio of the cost of mangoes per kg in City I to the cost of mangoes per kg in City II.

8. The following double bar graph represents test matches results summary for Cricket Team of country X against different countries:
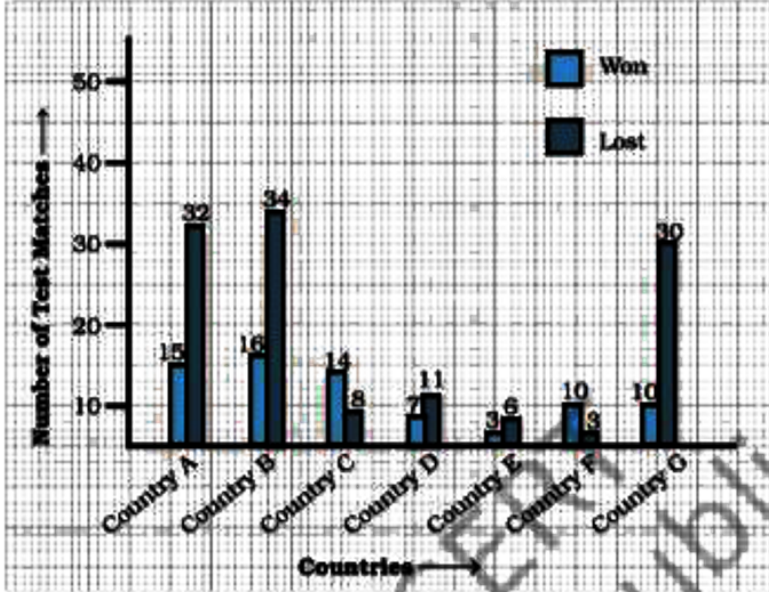
Use the bar graph to answer the following questions:

(a) Which country has managed maximum wins against country X?
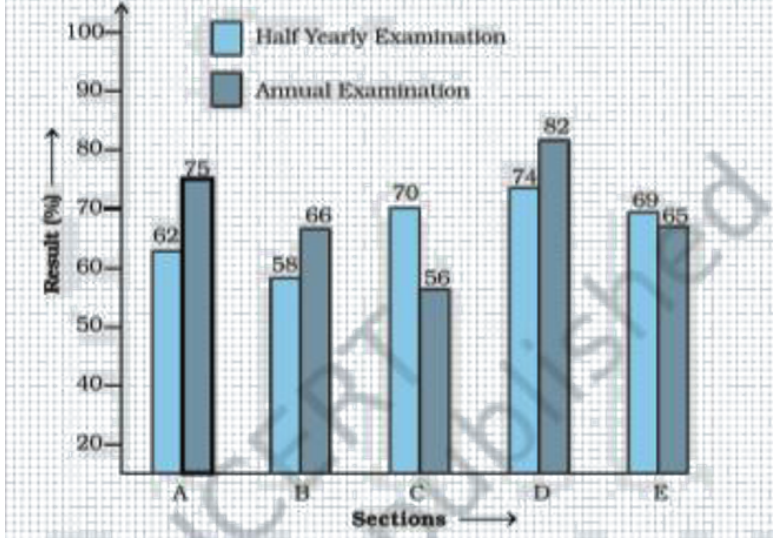
(b) The difference between the number of matches won and lost is highest for which country against country X?

(c) Number of wins of country E is the same as number of losses of which country against country X?

9. The double bar graph given below compares the class-averages in half yearly and annual examinations of 5 sections of Class VII.

Observe the graph carefully and tell which section showed the most improvement and by how much?

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Exercise Write The Correct Answer

1. Let x, y, z be three observations. The mean of these observations is

A. $\dfrac{x \times y \times z}{3}$

B. $\dfrac{x + y + z}{3}$

C. $\dfrac{x - y - z}{3}$

D. $\dfrac{x \times y + z}{3}$

Answer:

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2. The number of trees in different parks of a city are 33, 38, 48, 33, 34, 34, 33 and 24. The mode of this data is

A. 24

B. 34

C. 33

D. 48

Answer:

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3. Which measures of central tendency get affected if the extreme observations on both the ends of a data arranged in descending order are removed?

A. mean and mode

B. mean and median

C. mode and median

D. mean , median and mode

Answer:

4. The range of the data : 21, 6, 17, 18, 12, 8, 4, 13

is

    A. 17

    B. 12

    C. 8

    D. 15

Answer:

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5. The median of the data : 3, 4, 5, 6, 7, 3, 4 is

A. 5

B. 3

C. 4

D. 6

Answer:

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6. Out of 5 brands of chocolates in a shop, a boy has to purchase the brand which is most liked by children. What measure of central tendency would be most appropriate if the data is provided to him?
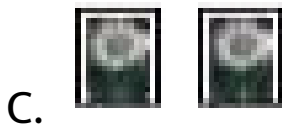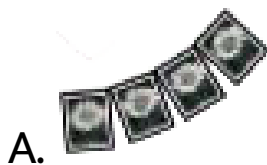
A. mean

B. mode

C. median

D. any of the three

Answer:

7. There are 2 aces in each of the given set of cards placed face down. From which set are you certain to pick the two aces in the first go?

A.

B.

C.

D.

Answer:

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8. The difference between the highest and the

lowest observations in a data is its

   A. frequency

   B. width

C. range

D. mode

Answer:

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9. In a school, only 2 out of 5 students can participate in a quiz. What is the chance that a student picked at random makes it to the competition?

A. 0.2

B. 0.4

C. 0.5

D. 0.3

Answer:

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10. Some integers are marked on a board. What is the range of these integers?

0   15

−11
            −17

      +20
6   − 4

A. 31

B. 37

C. 20

D. 3

Answer:

11. On tossing a coin the outcome is

    A. only head

    B. only tail

    C. neither head nor tail

    D. either head or tail

Answer:

12. The mean of three numbers is 40. All the three numbers are different natural numbers. If lowest is 19, what could be highest possible number of remaining two numbers?

A. 81

B. 40

C. 100

D. 71

Answer:

13. Khilona earned scores of 97, 73 and 88 respectively in her first three examinations. If she scored 80 in the fourth examination, then her average score will be

A. increased by 1

B. increased by 1.5

C. decreased by 1

D. decreased by 1.5

Answer:

14. Which measure of central tendency best represents the data of the most popular politician after a debate?

A. mean

B. median

C. mode

D. any of the above

Answer: C

15. Which of the following has the same mean, median and mode?

    A. 6,2,5,4,3,4,1

    B. 4,2,2,1,3,2,3

    C. 2,3,7.3,8,3,2

    D. 4,3,4,3,4,6,4

Answer:

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Exercise Fill In The Blanks

1. The difference between the highest and the lowest observations in a data is its

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2. The mean of a data is defined as............

3. In a set of observations, the observation that occurs the most often is called_____

4. In a given data, arranged in ascending or descending order, the middle most

observation is called_____

5. Mean, Median, Mode are the measures of_____.

6. The probability of an event which is certain to happen is_____.

7. The probability of an event which is impossible to happen is_____

8. When a die is thrown, the probability of getting a number less than 7 is …………….

9. In Throwing a die the number of possible outcomes is_____

10. _____can be used to compare two collections of data.

11. The representation of data with bars of uniform width is called

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12. If the arithmetic mean of 8, 4, x, 6, 2, 7 is 5, then the value of x is

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13. The median of any data lies between the_____and_____observations

14. Median is one of the observations in the data if number of observations is_____

15. Rohit collected the data regarding weights of students of his class and prepared the following table:

Weight (in kg)	44 – 47	48 – 51	52 – 55	56 – 60
Number of Students	3	5	25	7

A student is to be selected randomly from his class for some competition. The probability of selection of the student is highest whose weight is in the interval_____

Exercise True Or False

1. True or False

If a die is thrown, the probability of getting a number greater than 6 is 1.

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2. True or False

When a coin is tossed, there are 2 possible outcomes.

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3. True or False

If the extreme observations on both the ends of a data arranged in ascending order are removed, the median gets affected.

4. State True or False:

The measures of central tendency may not lie between the maximum and minimum values of data.

5. True or False

It is impossible to get a sum of 14 of the numbers on both dice when a pair of dice is thrown together.

6. State True or False:
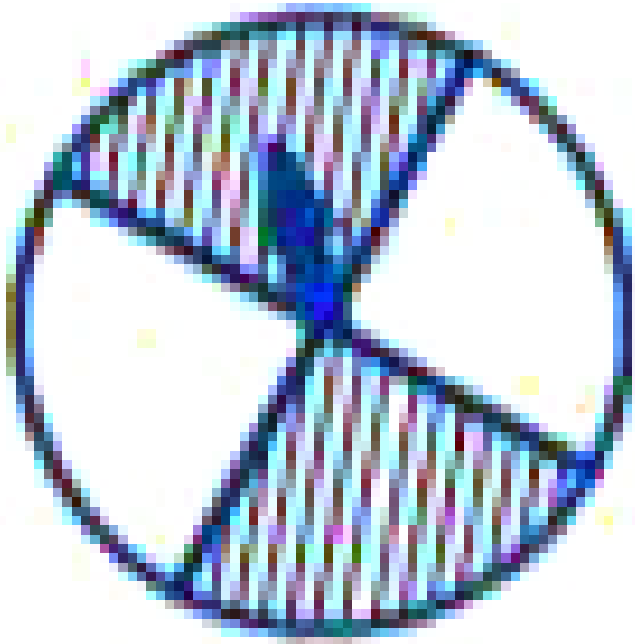
The probability of the spinning arrow

stopping in the shaded region is $\dfrac{1}{2}$

7. State True or False:

A coin is tossed 15 times and the outcomes are

recorded as follows

HTTHTHHHTTHTHTT. The chance of occurence of a head is 50 per cent.

8. State True or False

Mean, Median and Mode may be the same for some data.

9. State True or False

The probability of getting an ace out of a deck of cards is greater than 1.

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10. State True or False:

Mean of the data is always from the given data.

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11. State True or False:

Median of the data may or may not be from the given data.

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12. State True or False:

Mode of the data is always from the given data.

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13. State True or False:

Mean of the observations can be lesser than each of the observations.

14. State True or False:

Mean can never be a fraction.

15. State True or False:

Range of the data is always from the data.

16. State True or False:

The data 12, 13, 14, 15, 16 has every observation as mode.

17. State True or False:

The range of the data 2, -5, 4, 3, 7, 6 would change if 2 was subtracted from each value in the data.

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18. State True or False:

The range of the data 3, 7, 1, -2, 2, 6, -3, -5 would change if 8 was added to each value in the data.

Exercise

1. Calculate the Mean, Median and Mode of the following data: 5, 10, 10, 12, 13. Are these three equal ?

2. Find the mean of the first ten even natural numbers.

3. A data constitutes of heights (in cm) of 50 children. What do you understand by mode for the data?

4. A car seller collects the following data of cars sold in his shop.

Colour of Car	Number of Cars Sold
Red	15
Black	20
White	17
Silver	12
Others	9

(a) Which colour of the car is most liked?

(b) Which measure of central tendency was used in (a)?

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5. The marks in a subject for 12 students are as

follows: 31, 37, 35, 38, 42, 23, 17, 18, 35, 25, 35, 29

For the given data, find the

(a) range

(b) mean

(c) median

(d) mode

6. The following are weights (in kg) of 12 people. 70, 62, 54, 57, 62, 84, 75, 59, 62, 65, 78, 60
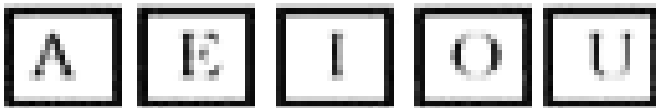
(a) Find the mean of the weights of the people.

(b) How many people weight above the mean weight?

(c) Find the range of the given data.

7. Following cards are put facing down:

| A | E | I | O | U |

What is the chance of drawing out a card marked U

A. a vowel

B. a card marked U

C. A or I

D. a consonant

Answer:

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8. For the given data given below, calculate the mean of its median and mode.

6, 2, 5, 4, 3, 4, 4, 2, 3

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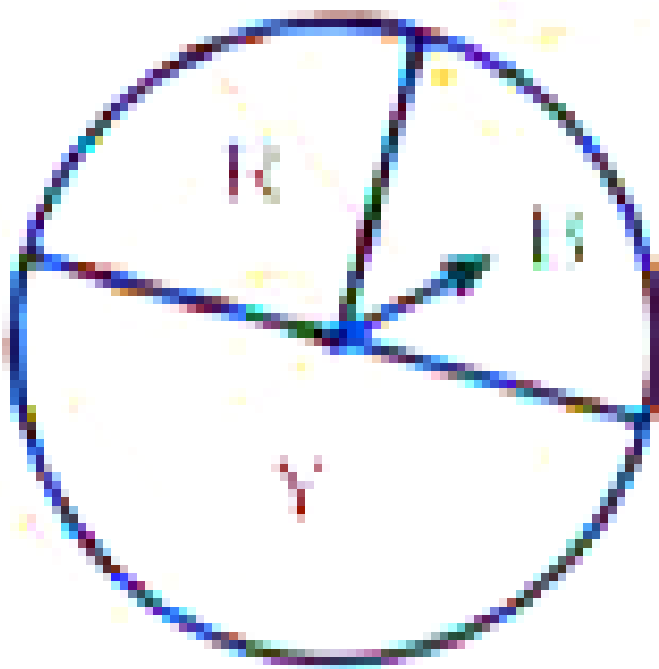**9.** Find the median of the given data if the mean is 4.5.

$5, 7, 7, 8, x, 5, 4, 3, 1, 2$

10. What is the probability of the sun setting tomorrow?

11. When a spinner with three colours (Fig. 3.5) is rotated, which colour has more chance to show up with arrow than the others?

12. What is the probability that a student chosen at random out of 3 girls and 4 boys is a boy?

13. The letters written on paper slips of the word MEDIAN are put in a bag. If one slip is drawn randomly, what is the probability that it bears the letter D?

14. Classify the following events as certain to happen, impossible to happen, may or may not happen:

(a) Getting a number less than 1 on throwing a die.

(b) Getting head when a coin is tossed.

(c) A team winning the match.

(d) Christmas will be on 25 December.

(e) Today moon will not revolve around the earth.

(f) A ball thrown up in the air will fall down after some time.

15. A die was thrown 15 times and the outcomes recorded were 5, 3, 4, 1, 2, 6, 4, 2, 2, 3, 1, 5, 6, 1, 2 Find the mean, median and mode of the data.

16. Find the mean of first six multiples of 4.

17. Find the median of first nine even natural numbers.

18. The mean of three numbers is 10. The mean of other four numbers is 12. Find the mean of

all the numbers.

19. Find the mode of the given data: 10, 8, 4, 7,

8, 11, 15, 8, 4, 2, 3, 6, 8

20. Given below are heights of 15 boys of a

class measured in cm:

128, 144, 146, 143, 136, 142, 138, 129, 140, 152,

144, 140, 150, 142, 154.

Find

(a) The height of the tallest boy.

(b) The height of the shortest boy.

(c) The range of the given data.

(d) The median height of the boys.

21. Observe the data and answer the questions

that follow:

16, 15, 16, 16, 8, 15, 17

(a) Which data value can be put in the data so that the mode remains the same?

(b) At least how many and which value(s) must be put in to change the mode to 15?

(c) What is the least number of data values that must be put in to change the mode to 17? Name them.

22. Age (in years) of 6 children of two groups are recorded as below:

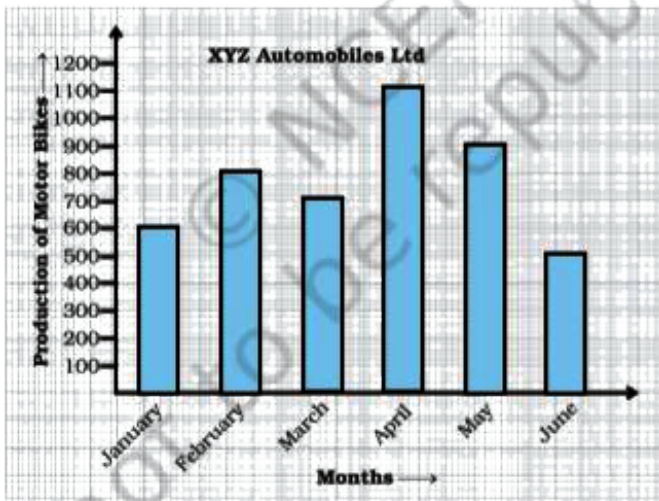| Age (in Years)	
Group A	Group B
7	7
7	9
9	11
8	12
10	12
10	12

(a) Find the mode and range for each group.

(b) Find the range and mode if the two groups are combined together

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23. Observe the given bar graph carefully and answer the questions that follow.

(a) What information does the bar graph depict?

(b) How many motor bikes were produced in the first three months?

(c) Calculate the increase in production in May over the production in January.

(d) In which month the production was minimum and what was it?

(e) Calculate the average (mean) production of bikes in 6 months.

24. The bar graph given below shows the marks of students of a class in a particular subject:
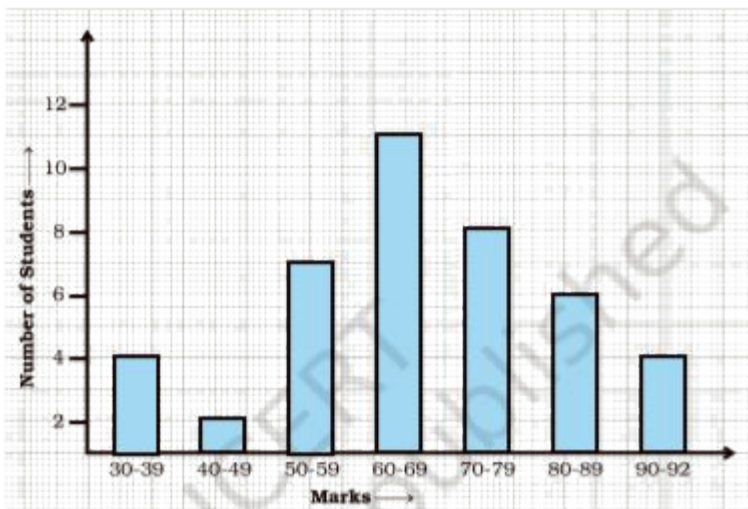
Study the bar graph and answer the following questions:

(a) If 40 is the pass mark, then how many students have failed?

(b) How many students got marks from 50 to 69?

(c) How many students scored 90 marks and above?

(d) If students who scored marks above 80 are given merits then how many merit holders are there?

(e) What is the strength of the class?

25. Study the bar graph given below and answer the questions that follow.
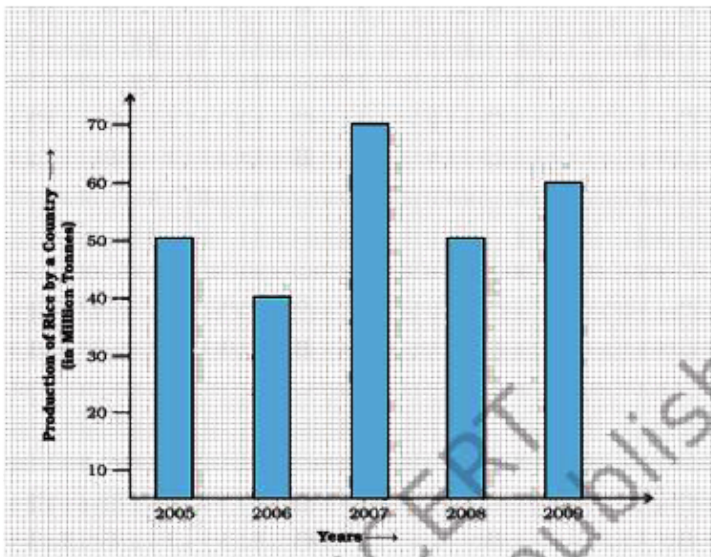
(a) What information does the above bar graph represent?

graph represent?

(b) In which year was production the least?

(c) After which year was the maximum rise in the production?

the production?

(d) Find the average production of rice during the 5 years.

the 5 years.

(e) Find difference of rice production between years 2006 and 2008.

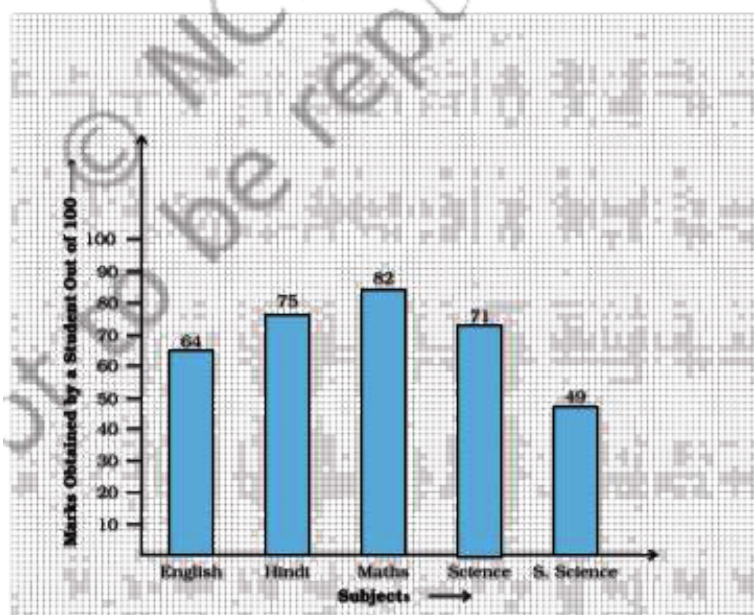**26.** Study the bar graph given below and answer the questions that follow

(a) What information is depicted from the bar graph?

(b) In which subject is the student very good?

(c) Calculate the average marks of the student.

(d) If 75 and above marks denote a distinction, then name the subjects in which the student got distinction.

(e) Calculate the percentage of marks the student got out of 500.

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27. The bar graph given below represents the circulation of newspapers (dailies) in a town in six languages (the figures are approximated to hundreds).
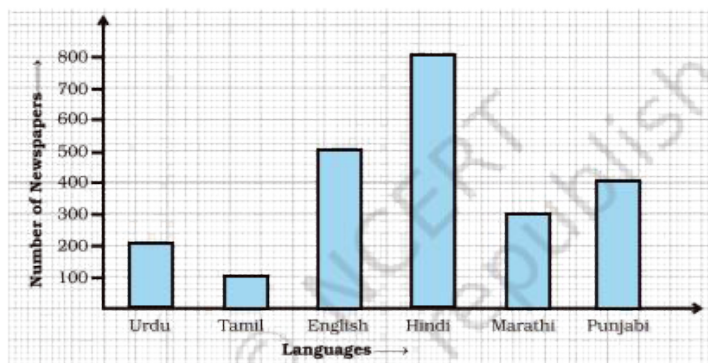
f

Study the bar graph and answer the following questions:

(a) Find the total number of newspapers read in Hindi, Punjabi, Urdu, Marathi and Tamil.

(b) Find the excess number of newspapers read in Hindi than those in English.

(c) Name the language in which the least number of newspapers are read.

(d) Write the total circulation of newspapers in the town.

28. Study the double bar graphs given belwo and answer the following questions
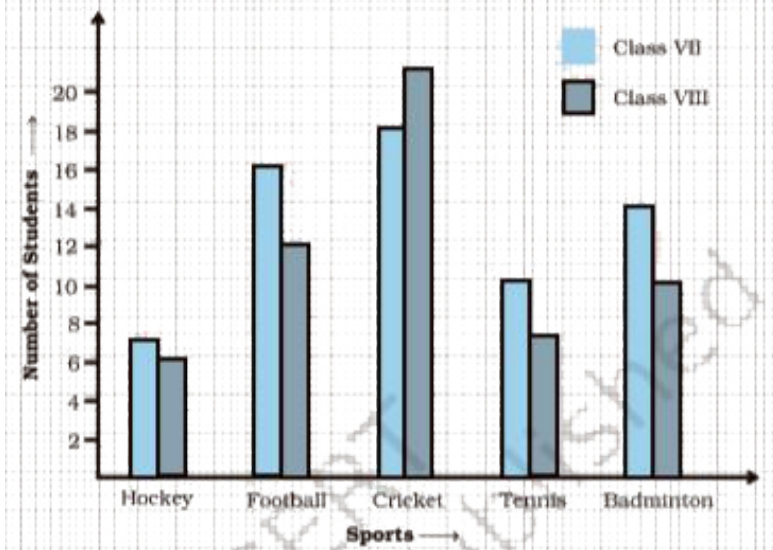
(a) Which sport is liked the most by Class VIII students?

(b) How many students of Class VII like Hockey and Tennis in all?

(c) How many students are there in Class VII?

(d) For which sport is the number of students of Class VII less than that of Class VIII?

(e) For how many sports students of Class VIII

are less than Class VII?

(f) Find the ratio of students who like Badminton in Class VII to students who like Tennis in Class VIII.

29. Study the double bar graph shown below and answer the questions that follow:

Months

Sales (in Lakh ₹) ⟶

Month	Brand A	Brand B
June	57	54
May	42	45
April	40	35
Mar	30	43
Feb	34	38
Jan	31	36
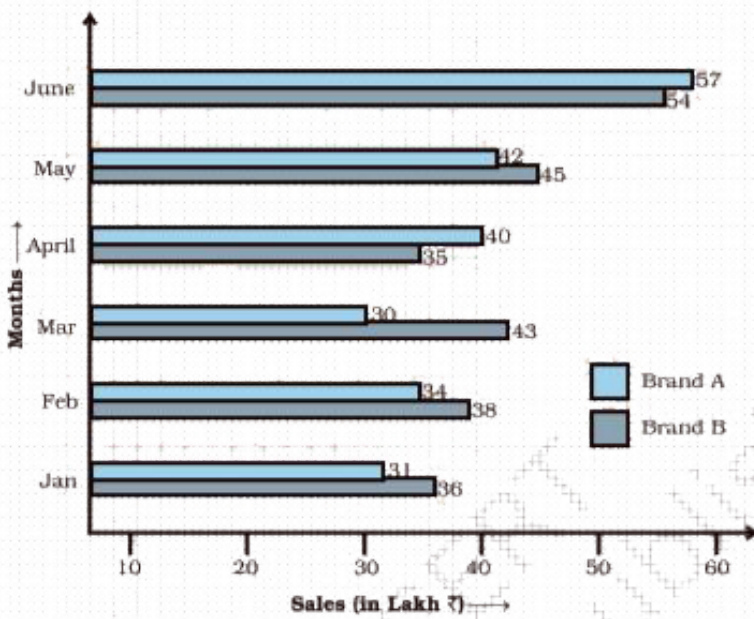
Brand A
Brand B

(a) What information is represented by the above double bar graph?

(b) In which month sales of Brand A decreased as compared to the previous month?

(c) What is the difference in sales of both the Brands for the month of June?

(d) Find the average sales of Brand B for the

six months.

(e) List all months for which the sales of Brand B was less than that of Brand A.

(f) Find the ratio of sales of Brand A as compared to Brand B for the month of January.

30. Study the double bar graph given below and answer the questions that follow:
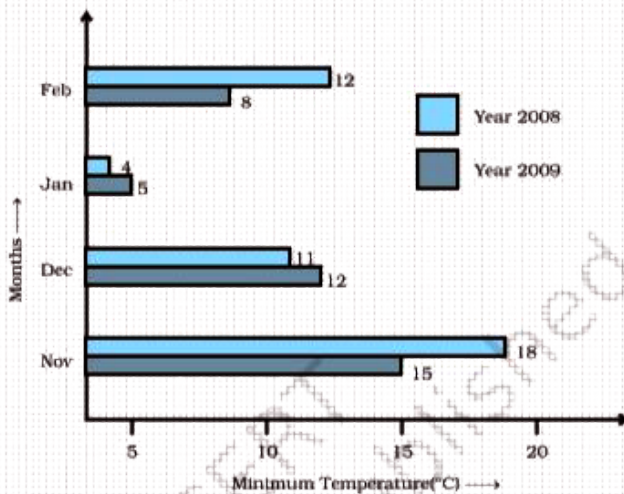
(a) What information is compared in the above given double bar graph?

(b) Calculate the ratio of minimum temperatures in the year 2008 to the year 2009 for the month of November.

(c) For how many months was the minimum temperature in the year 2008 greater than that of year 2009? Name those months.

(d) Find the average minimum temperature for the year 2008 for the four months.

(e) In which month is the variation in the two temperatures maximum?

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31. The following table shows the average intake of nutrients in calories by rural and urban groups in a particular year. Using a suitable scale for the given data, draw a

double bar graph to compare the data.

Foodstuff	Rural	Urban
Pulses	35	49
Leafy vegetables	14	21
Other vegetables	51	89
Fruits	35	66
Milk	70	250
Fish and flesh foods	10	22
Fats and Oils	9	35
Sugar/Jaggery	19	31

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32. Study the double bar graph and answer the quesions that follow:
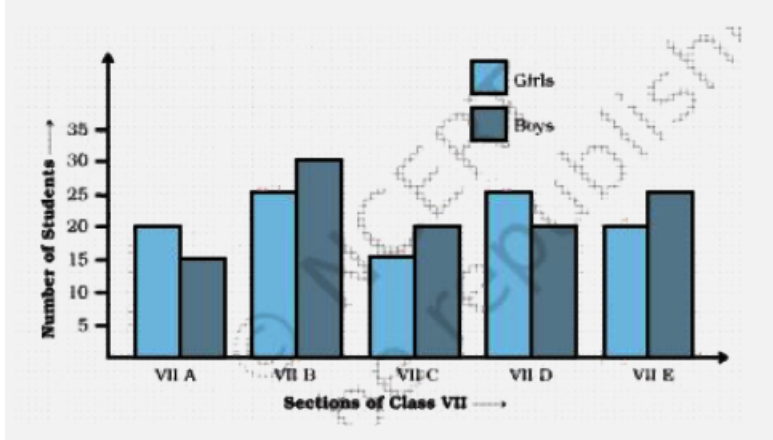
(a) What information does the double bar graph represent?

(b) Find the total number of boys in all sections of Class VII.

(c) In which sections, the number of girls is greater than the number of boys?

(d) In which section, the number of boys is the maximum?

(e) In which section, the number of girls is the least?

33. In a public library, the following observations were recorded by the librarian in a particular week:

Days	Mon	Tues	Wed	Thurs	Fri	Sat
Newspaper Readers	400	600	350	550	500	350
Magazine Readers	150	100	200	300	250	200

(a) Draw a double bar graph choosing an appropriate scale.

(b) On which day, the number of readers in the library was maximum?

(c) What is the mean number of magazine readers?

34. Observe the following data:

Government School, Chandpur		
Daily Attendance		Date : 15.4.2009
Class	Total Students	Number of Students Present on that Day
VI	90	81
VII	82	76
VIII	95	91
IX	70	65
X	63	62

(a) Draw a double bar graph choosing an

appropriate scale. What do you infer from the bar graph?

(b) Which class has the maximum number of students?

(c) In which class, the difference of total students and number of students present is minimum?

(d) Find the ratio of number of students present to the total number of students of Class IX.

(e) What per cent of Class VI students were absent?

35. Observe the given data:

Days of the Week	Mon	Tues	Wed	Thurs	Fri	Sat
Number of Mobile Phone Sets Sold	50	45	30	55	27	60

(a) Draw a bar graph to represent the above given information.

(b) On which day of the week was the sales maximum?

(c) Find the total sales during the week.

(d) Find the ratio of the minimum sale to the maximum sale.

(e) Calculate the average sale during the week.

(f) On how many days of the week was the sale above the average sales?

36. Below is a list of 10 tallest buildings in India.

This list ranks buildings in India that stand at least 150m (492 ft.) tall, based on standard height measurement. This includes spires and architectural details but does not include antenna marks. Following data is given as per

the available information till 2009. Since new buildings are always under construction, go on-line to check new taller buildings.

Use the information given in the table about sky scrapers to answer the following questions:

Name	City	Height	Floors	Year
Planet	Mumbai	181m	51	2009
UB Tower	Bengaluru	184 m	20	2006
Ashok Towers	Mumbai	193 m	49	2009
The Imperial I	Mumbai	249 m	60	2009
The Imperial II	Mumbai	249 m	60	2009
RNA Mirage	Mumbai	180 m	40	2009
Oberoi Woods Tower I	Mumbai	170 m	40	2009
Oberoi Woods Tower II	Mumbai	170 m	40	2009
Oberoi Woods Tower III	Mumbai	170 m	40	2009
MVRDC	Mumbai	156 m	35	2002

(a) Find the height of each storey of the three tallest buildings and write them in the following table:

Building	Height	Number of Storeys	Height of Each Storey

(b) The average height of one storey for the buildings given in (a) is

(c) Which city in this list has the largest percentage of skyscrappers? What is the percentage?

(d) What is the range of data?

(e) Find the median of the data.

(f) Draw a bar graph for given data.

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37. The marks out of 100 obtained by Kunal and Soni in the Half Yearly Examination are given below:

Subjects	English	Hindi	Maths	Science	S. Science	Sanskrit
Kunal	72	81	92	96	64	85
Soni	86	89	90	82	75	82

(a) Draw a double bar graph by choosing appropriate scale.

(b) Calculate the total percentage of marks obtained by Soni.

(c) Calculate the total percentage of marks obtained by Kunal.

(d) Compare the percentages of marks obtained by Kunal and Soni/

(e) In how many subjects did Soni get more marks than Kunal? Which are those subjects?

(f) Who got more marks in S. Science and what was the difference of marks?

(g) In which subject the difference of marks was maximum and by how much? "

38. The students of Class VII have to choose one club from Music, Dance, Yoga, Dramatics, Fine arts and Electronics clubs. The data given

below shows the choices made by girls and boys of the class. Study the table and answer the questions that follow:

Clubs	Music	Dance	Yoga	Dramatics	Fine Arts	Electronics
Girls	15	24	10	19	27	21
Boys	12	16	8	17	11	30

(a) Draw a double bar graph using appropriate scale to depict the above data.

(b) How many students are there in Class VII?

(c) Which is the most preferred club by boys?

(d) Which is the least preferred club by girls?

(e) For which club the difference between boys and girls is the least?

(f) For which club is the difference between boys and girls the maximum?

39. The data given below shows the production of motor bikes in a factory for some months of two consecutive years.

Months	Feb	May	August	October	December
2008	2700	3200	6000	5000	4200
2007	2800	4500	4800	4800	5200

Study the table given above and answer the following questions:

(a) Draw a double bar graph using appropriate

scale to depict the above information and compare them.

(b) In which year was the total output the maximum?

(c) Find the mean production for the year 2007.

(d) For which month was the difference between the production for the two years the maximum?

(e) In which month for the year 2008, the production was the maximum?

(l) In which month for the year 2007, the production was the least?

40. The table below compares the population

(in hundreds) of 4 towns over two years:

Towns	A	B	C	D
2007	2900	6400	8300	4600
2009	3200	7500	9200	6300

Study the table and answer the following

questions:

(a) Draw a double bar graph using appropriate

scale to depict the above information.

(b) In which town was the population growth

maximum?

(c) In which town was the population growth least?

41. The table below gives the data of tourists visiting 5 hill stations over two consecutive years. Study the table and answer the questions that follow:

Hill stations	Nainital	Shimla	Manali	Mussoorie	Kullu
2008	4000	5200	3700	5800	3500
2009	4800	4500	4200	6200	4600

(a) Draw a double bar graph to depict the above information using appropriate scale.

(b) Which hill station was visited by the maximum number of tourists in 2008?

(c) Which hill station was visited by the least number of tourists in 2009?

(d) In which hill stations was there increase in number of tourists in the year 2009?

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42. The table below gives the flavours of ice cream liked by children (boys and girls) of a society.

Flavours	Vanilla	Chocolate	Strawberry	Mango	Butterscotch
Boys	4	9	3	8	13
Girls	8	12	7	9	10

Study the table and answer the following questions:

(a) Draw a double bar graph using appropriate scale to represent the above information.

(b) Which flavour is liked the most by the boys?

(c) How many girls are there in all?

(d) How many children like chocolate flavour of ice cream?

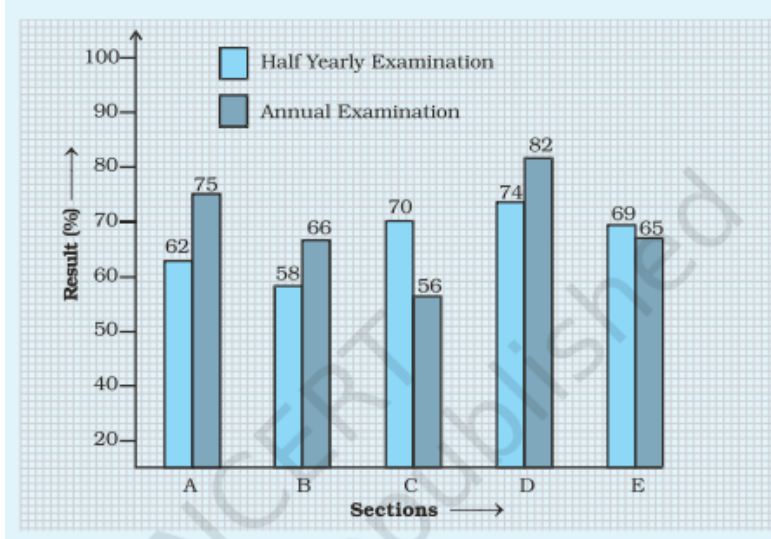(e) Find the ratio of children who like

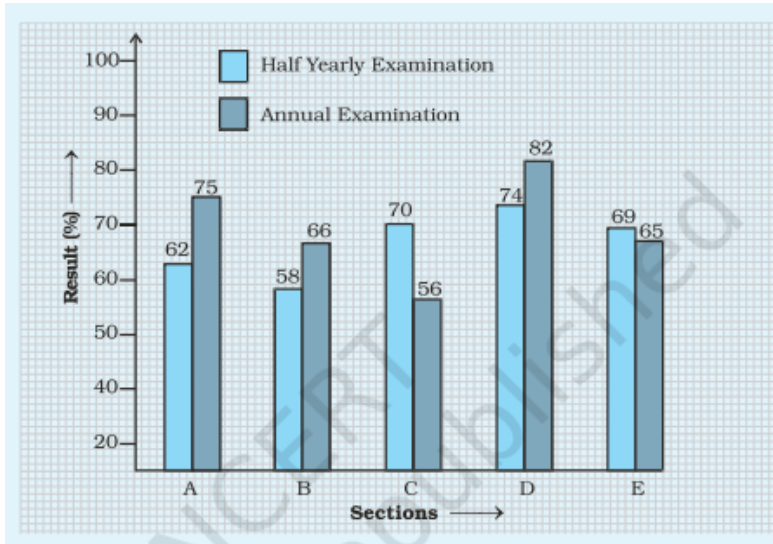strawberry flavour to vanilla flavour of ice cream.

Think And Discuss

1. The double bar graph given below compares the class-averages in half yearly and annual examinations of 5 sections of Class VII.

Can you compare the ratio of difference of results of sections B and D ?

2.

From the graph can you observe the sections where there war no improvement ?

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3. What is the difference between a bar graph and a histogram

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