



# MATHS

## NCERT - NCERT MATHEMATICS(TAMIL ENGLISH)

### STATISTICS

#### Example

1. The relative humidity (in %) of a certain City for a September month of 30 days was as

follows:



(i) Construct a grouped frequency distribution table with classes 84-86, 86,-88 etc.

(ii) What is the range of the data?



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2. Rain fall of a place in the week is 4 cm, 5 cm, 12cm, 3cm, 6cm, 8cm, 0.5cm. Find the average rainfall per day.



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3. If the mean of 10, 12, 18, 13, P and 17 is 15, find the value of P.



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4. find the mean of the following data.



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5. If the mean of the following data is 7.5, then find the value of 'A'.



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6. find the arithmetic mean of the following data.



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7. The following numbers are the sizes of shoes sold by a shop in a particular day. Find the mode.

6, 7, 8, 9, 10, 6, 7, 10, 7, 6, 7, 9, 7, 6



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8. Test scores out of 100 for a class of 20 students are as follows:

93, 84, 97, 98, 100, 78, 86, 100, 85, 92, 55, 91, 90,  
75, 94, 93, 60, 81, 95

(a) Make a frequency table taking class interval

as 91-100, 81-90, ...

(b) Find the modal class (The "Modal class" is the class containing the greatest frequency).

(c) find the interval that contains the median.



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9. The arithmetic mean of 6 values is 45 and if each value is increased by 4, then find the arithmetic mean of new set of values.



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**10.** If the arithmetic mean of 7 values is 30 and if each value is divided by 3, then find the arithmetic mean of new set of values



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**11.** The average mark of 25 students was found to be 78.4. Later on, it was found that score of 96 was misread as 69. Find the correct mean of the marks.



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**12.** The following are scores obtained by 11 players in a cricket match 7, 21, 45, 12, 56, 35, 25, 0, 58, 66, 29. Find the median score.



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**13.** For the following ungrouped data 10, 17, 16, 21, 13, 18, 12, 10, 19, 22. Find the median.



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**14.** In a rice mill, seven labours are receiving the daily wages of Rs. 500, Rs. 600, Rs. 600, Rs. 800, Rs. 800, Rs. 800 and Rs. 1000, find the modal wage.



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**15.** Find the mode for the set of values 17, 18, 20, 20, 21, 21, 22, 22.



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**16.** A set of numbers consists of five 4's, four 5's, nine 6's, and six 9's. What is the mode.



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**17.** In a distribution, the mean and mode are 66 and 60 respectively. Calculate the median.



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**Exercise 9 1**

# 1. Draw a tally mark table for the following

Form a frequency table for the following data

23	44	12	11	45	55	79	20
52	37	77	97	82	56	28	71
62	58	69	24	12	99	55	78
21	39	80	65	54	44	59	65
17	28	65	35	55	68	84	97
80	46	30	49	50	61	59	33
11	57						



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2. The blood group of 36 students of IX class are recorded as follows



Represent the data in the form of frequency

distribution table. Which is the most common and which is the rarest blood group among these students?



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3. Three coins are tossed 30 times simultaneously. Each time the number of heads occurring was noted down as follows:



Prepare a frequency distribution table for the data given above.



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4. A TV channel or organised SMS (Short Message Service) poll on prohibition on smoking giving options like A- complete prohibition, B- prohibited in public places only, C- not necessary, SMS results in one hour were



Represent the amount of data is grouped frequency distribution table. How many appropriate answers were received? What was the majority of peoples' opinion?



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5. Represent the data in the adjacent bar graph as frequency distribution table.



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6. Identify the scale used on the axes of the adjacent graph. Write the frequency distribution from it.





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7. The marks of 30 students of a class of 10 in a test (out of 75) are given below

40, 21, 50, 37, 42, 37, 38, 42, 49, 52, 38, 53, 57, 47,

29,

59, 61, 33, 17, 17, 39, 44, 42, 39, 14, 7, 27, 19, 54, 51.

Form a frequency table with equal class intervals.



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8. The electricity bills (in rupees) of 25 houses in a locality are given below. Construct a grouped frequency distribution table with a class size of 75.

170, 212, 252, 225, 310, 712, 412, 425, 322, 325,  
192, 198, 230, 320, 412,  
530, 602, 724, 370, 402, 317, 403, 405, 372, 413



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9. A company manufactures car batteries of particular type. The life (in years) of 40



batteries was recorded as follows:



Construct a grouped frequency distribution table with exclusive classes for this data, using class intervals of size 0.5 starting from the interval 2-2.5.



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**Exercise 9 2**

1. Weights of parcels in a transport office are given below.



Find the mean weight of the parcels.



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2. Number of families in a village in correspondence with the number of children are given below:



Find the mean number of children per family.



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3. If the mean of the following frequency distribution is 7.2 find value of 'K'.



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4. Number of villages with respect to their population as per India census 2011 are given below.



Find the average population in each village.



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5. AFLATOUN social and financial educational program initiated savings program among the high school children in Hyderabad district.

Mandal wise savings in a month are given in the following table



Find arithmetic mean of school wise savings in each mandal. Also find the arithmetic mean of saving of all schools.



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**6.** The heights of boys and girls of IX class of a school are given below.



Compare the heights of the boys and girls.



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7. Centuries scored and number of cricketers in the world are given below.



Find the mean, median and mode of the given data.



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8. On the occasion of New year's day a sweet stall prepared sweet packets. Number of sweet packets and cost of each packet are given as follows.



Find the mean, median and mode of the data.



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9. The mean (average) weight of three students is 40 kg. One of the students Ranga weighs 46 kg. The other two students, Rahim

and Reshma have the same weight. Find Rahims weight.



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**10.** The donations given to an orphanage home by the students of different classes of a secondary school are given below.



Find the mean, median and mode of the data.



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**11.** There are four unknown numbers. The mean of the first two numbers is 4 and the mean of the first three is 9. The mean of all four numbers is 15, if one of the four numbers is 2 find the other numbers.



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**Try These**

**1.** Which of the following are primary and secondary data?

i. Collection of the data about enrollment of students in your school for a period from 2001 to 2010.

ii. Height of students in your class recorded by physical education teacher.



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2. Find the median of the scores 75, 21, 56 , 36 , 81 , 05, 42



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3. Median of a data , arranged in ascending order 7,10,15,x,y,27,30 is 17 and when one more observation 5 is added to the data, the median has become 18 . Find x and y.



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4. Find the median marks in the data.



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5. In finding the median, the given data must be written in order. Why ?



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**Do This**

1. Which of the following are primary and secondary data?

i. Collection of the data about enrollment of students in your school for a period from 2001 to 2010.

ii. Height of students in your class recorded by physical education teacher.



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## Think And Discuss

1. Classify your class mates according to their heights and find the mode of it.



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2. If shopkeeper has to place a order for shoes, which number shoes should he order more?



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## Exercise 8 1

1. In a week, temperature of a certain place is measured during winter are as follows  $26^{\circ} C$ ,  $24^{\circ} C$ ,  $28^{\circ} C$ ,  $31^{\circ} C$ ,  $30^{\circ} C$ ,  $26^{\circ} C$ ,  $24^{\circ} C$ . Find the meantemperature of the week



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2. The mean weight of 4 members of a family is 60kg. Three of them have the weight 56kg, 68kg and 72kg respectively. Find the weight of the fourth member.



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3. In a class test in mathematics, 10 students scored 75 marks, 12 students scored 60 marks,

8 students scored 40 marks and 3 students scored 30 marks. Find the mean of their score.



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4. In a research laboratory scientists treated 6 mice with lung cancer using natural medicine. Ten days later, they measured the volume of the tumor in each mouse and given the results in the table.

Mouse marking	1	2	3	4	5	6
Tumor Volume( $\text{mm}^3$ )	145	148	142	141	139	140

Find the mean





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5. If the mean of the following data is 20.2, then find the value of  $p$

Marks	10	15	20	25	30
No. of students	6	8	$p$	10	6



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**Exercise 8 2**

1. Find the median of the given values : 47, 53, 62, 71, 83, 21, 43, 47, 41.



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2. Find the Median of the given data: 36, 44, 86, 31, 37, 44, 86, 35, 60, 51



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3. The median of observation 11, 12, 14, 18,  $x+2$ ,  $x+4$ , 30, 32, 35, 41 arranged in ascending order is 24. Find the values of  $x$ .



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4. A researcher studying the behavior of mice has recorded the time (in seconds) taken by each mouse to locate its food by considering 13 different mice as 31, 33, 63, 33, 28, 29, 33, 27,

27, 34, 35, 28, 32. Find the median time that mice spent in searching its food.



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5. The mean of five positive integers is twice their median. If four of the integers are 3, 4, 6, 9 and median is 6, then find the fifth integer.



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**Exercise 8 3**

1. The monthly salary of 10 employees in a factory are given below :

Rs. 5000, Rs. 7000, Rs. 5000, Rs. 7000, Rs. 8000,

Rs. 7000, Rs. 7000, Rs. 8000, Rs. 7000, Rs. 5000

Find the mean, median and mode.



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2. Find the mode of the given data : 3.1, 3.2, 3.3,

2.1, 1.3, 3.3, 3.1



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3. For the data 11, 15, 17,  $x+1$ , 19,  $x-2$ , 3 if the mean is 14 , find the value of  $x$ . Also find the mode of the data.



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## Exercise 8 4

1. Let  $m$  be the mid point and  $b$  be the upper limit of a class in a continuous frequency distribution. The lower limit of the class is

A.  $2m - b$

B.  $2m + b$

C.  $m - b$

D.  $m - 2b$ .

**Answer: A**



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2. The mean of a set of seven numbers is 81. If one of the numbers is discarded, the mean of

the remaining numbers is 78 . The value of discarded number is

A. 101

B. 100

C. 99

D. 98

**Answer: C**



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3. A particular observation which occurs maximum number of times in a given data is called its

A. Frequency

B. range

C. mode

D. Median

**Answer: C**



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4. For which set of numbers do the mean, median and mode all have the same values?

A. 2,2,2,4

B. 1,3,3,3,5

C. 1,1,2,5,6

D. 1,1,2,1,5.

**Answer: B**



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5. The algebraic sum of the deviations of a set of  $n$  values from their mean is

A. 0

B.  $n-1$

C.  $n$

D.  $n+1$

**Answer: A**



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6. The mean of  $a, b, c, d$  and  $e$  is  $28$ . If the mean of  $a, c$  and  $e$  is  $24$ , then mean of  $b$  and  $d$  is

A.  $24$

B.  $36$

C.  $26$

D.  $34$

**Answer: D**



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7. If the mean of five observations  $x, x+2, x+4, x+6, x+8$ , is 11, then the mean of first three observations is

A. 9

B. 11

C. 13

D. 15

**Answer: A**



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8. The mean of 5, 9,  $x$ , 17, and 21 is 13, then find the value of  $x$

A. 9

B. 13

C. 17

D. 21

**Answer: B**



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9. The mean of the square of first 11 natural numbers is

A. 26

B. 46

C. 48

D. 52

**Answer: B**



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10. The mean of a set of numbers is  $\bar{X}$ . If each number is multiplied  $z$ , the mean is

A.  $\bar{X} + z$

B.  $\bar{X} - z$

C.  $z\bar{X}$

D.  $\bar{X}$

**Answer: C**



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