

MATHS

BOOKS - SWAN PUBLICATION

STATISTICS

Exercise 14 1

1. Give some examples of data that you can collect from your day to day life.



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2. Classify the data in Above as primary and secondary data.



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Exercise 14 2

1. The blood groups of 30 students of Class VIII are recorded as follows: A, B, O, O, AB, O, A, O, B, A, O, B, A, O, O, A, AB, O, A, A, O, O, AB, B, A, O, B, A, B, O. Represent this data in the form of a frequency distribution table. Which is the most common, and which is the rarest, blood group among these students?



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2. The distance (in km) of 40 engineers from their residence to their place of work were found as follows:

5, 3, 10, 20, 25, 11, 13, 7, 12, 31

19, 10, 12, 17, 18, 11, 32, 17, 16, 2

7, 9, 7, 8, 3, 5, 12, 15, 18, 3

12, 14, 2, 9, 6, 15, 15, 7, 6, 12

Construct a grouped frequency distribution table with class size 5 for the data given above taking the first interval as 0-5 (5 not included). What main features do you observe from this tabular representation ?



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3. The relative humidity (in %) of a certain city for a month of 30 days was as follows :

98.1	98.6	99.2	90.3	86.5
95.3	92.9	96.3	94.2	95.1
89.2	92.3	97.1	93.5	92.7
95.1	97.2	93.3	95.2	97.3
96.2	92.1	84.9	90.2	95.7
98.3	97.3	96.1	92.1	89

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

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4. The relative humidity (in %) of a certain city for a month of 30 days was as follows :

98.1	98.6	99.2	90.3	86.5
95.3	92.9	96.3	94.2	95.1
89.2	92.3	97.1	93.5	92.7
95.1	97.2	93.3	95.2	97.3
96.2	92.1	84.9	90.2	95.7
98.3	97.3	96.1	92.1	89

: Which

month or season do you think this data is about ?



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5. The relative humidity (in %) of a certain city for a month of 30 days was as follows :

98.1	98.6	99.2	90.3	86.5
95.3	92.9	96.3	94.2	95.1
89.2	92.3	97.1	93.5	92.7
95.1	97.2	93.3	95.2	97.3
96.2	92.1	84.9	90.2	95.7
98.3	97.3	96.1	92.1	89

: What is

the range of this data ?



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6. The height of 50 students, measured to the nearest centimetres have been found to be as follows:

FOLLOWS:

161 150 154 165 168 161 154 162 150 151
 162 164 171 165 158 154 156 172 160 170
 153 159 161 170 162 165 166 168 165 164
 154 152 153 156 158 162 160 161 173 166
 161 159 162 167 168 159 158 153 154 159.

(i) Represent the data above by a grouped

Represent the data given above by a grouped

frequency distribution table, taking the class intervals as 160-165, 165-170 etc.



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7. The height of 50 students, measured to the nearest centimetres have been found to be as follows:

follows:

**161 150 154 165 168 161 154 162 150 151
162 164 171 165 158 154 156 172 160 170
153 159 161 170 162 165 166 168 165 164
154 152 153 156 158 162 160 161 173 166
161 159 162 167 168 159 158 153 154 159.**

(i) Represent the data above by a grouped

frequency distribution table, taking the class intervals as 160-165, 165-170 etc.



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8. Define

Parts per million



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9. A study was conducted to find out the concentration of sulphur dioxide in the air in parts per million (ppm) of a certain city. The data obtained for 30 days is as follows :

0.03	0.08	0.08	0.09	0.04	0.17
0.16	0.05	0.02	0.06	0.18	0.20
0.11	0.08	0.12	0.13	0.22	0.07
0.08	0.01	0.10	0.06	0.09	0.18
0.11	0.07	0.05	0.07	0.01	0.04

For how

many days, was the concentration of sulphur dioxide more than 0.11 parts per million.



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

0, 1, 2, 2, 1, 2, 3, 1, 3, 0

1, 3, 1, 1, 2, 2, 0, 1, 2, 1

3, 0, 0, 1, 1, 2, 3, 2, 2, 0

Prepare a frequency distribution table for the data given above.



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11. The value of π upto 50 decimal places is given below:

3.14159265358979323846264338327950288419716939937510

(i) Make a frequency distribution of the digits from 0 to 9 after the decimal point. (ii) What are the most and the least frequently occurring digits?



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12. The value of π upto 50 decimal places is given below:

3.14159265358979323846264338327950288419716939937510

(i) Make a frequency distribution of the digits from 0

to 9 after the decimal point. (ii) What are the most and the least frequently occurring digits?



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13. Thirty children were asked about the number of hours they watched TV programmes in the previous week. The results were found as follows:

1, 6, 2, 3, 5, 12, 5, 8, 4, 8

10, 3, 4, 12, 2, 8, 15, 1, 17, 6

3, 2, 8, 5, 9, 6, 8, 7, 14, 12

Make a grouped frequency distribution table for this data, taking class width 5 and one of the class intervals as 5-10.



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14. Thirty children were asked about the number of hours they watched TV programmes in the previous week. The results were found as follows:

1, 6, 2, 3, 5, 12, 5, 8, 4, 8

10, 3, 4, 12, 2, 8, 15, 1, 17, 6

3, 2, 8, 5, 9, 6, 8, 7, 14, 12

How many children watched television for 15 or more hours a week?



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15. Give colour of following solution :

FeSO_4



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Exercise 14 3

1. A survey conducted by an organisation for the cause of illness and death among the women between the ages 15-44 (in years) worldwide, found the following figures (in %):

S. No.	Causes	Female Fatality rate (%)
1.	Reproductive health conditions	31.8
2.	Neuropsychiatric conditions	25.4
3.	Injuries	12.4
4.	Cardiovascular conditions	4.3
5.	Respiratory conditions	4.1
6.	Other causes	22.0

Represent the information given above graphically.



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2. A survey conducted by an organisation for the cause of illness and death among the women between the ages 15 - 44 (in years) worldwide, found the following figures (in%)

Causes	Female Mortality rate (%)
1. Sexual & Reproductive health conditions	31.8
2. Neuropsychiatric conditions	25.4
3. Injuries	12.4
4. Cardiovascular condition	4.3
5. Respiratory conditions	4.1
6. Other causes	22.0

: Which

condition is the major cause of women's ill health and death worldwide ?

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3. A survey conducted by an organisation for the cause of illness and death among the women between the ages 15-44 (in years) worldwide, found the following

figures (in %):

S. No.	Causes	Female Fatality rate (%)
1.	Reproductive health conditions	31.8
2.	Neuropsychiatric conditions	25.4
3.	Injuries	12.4
4.	Cardiovascular conditions	4.3
5.	Respiratory conditions	4.1
6.	Other causes	22.0

Represent the information given above by a bar graph.



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4. The following data on the number of girls (to the nearest ten) per thousand boys in different sections of Indian Society is given below :

Section	Number of girls per thousand boys
Scheduled Caste	940
Scheduled Tribes	970
Non SC/ST	920
Backward districts	950
Non-backward districts	920
Rural	930
Urban	910

Represent the information above by a bar graph



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5. The following data on the number of girls (to the nearest ten) per thousand boys in different sections of Indian Society is given below :

Section	Number of girls per thousand boys
Scheduled Caste	940
Scheduled Tribes	970
Non SC/ST	920
Backward districts	950
Non-backward districts	920
Rural	930
Urban	910

:

Represent the information above by a bar graph



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6. Given below are the seats won by different political parties in the polling outcome of a state assembly elections :

Political Parties	A	B	C	D	E	F
Seats Won	75	55	37	29	10	37

: Draw a

bar graph to represent the polling results.



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7. Given below are the seats won by different political parties in the polling outcome of a state assembly elections :

Political Parties	A	B	C	D	E	F
Seats Won	75	55	37	29	10	37

: Which

political party won the maximum number of seats.



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8. The length of 40 leaves of a plant are measured correct to one millimetre, and the obtained data is represented in the following table.

obtained data is represented in the following table

Length in mm	Number of leaves
118-126	3
127-135	5
136-144	9
145-153	12
154-162	5
163-171	4
172-180	2

: Draw a

histogram to represent the given data.



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9. The length of 40 leaves of a plant are measured correct to one millimetre, and the obtained data is represented in the following table.

Length in mm	Number of leaves
118-126	3
127-135	5
136-144	9
145-153	12
154-162	5
163-171	4
172-180	2

: Is there any other suitable graphical representation for the same data ?

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10. The length of 40 leaves of a plant are measured correct to one millimetre, and the obtained data is represented in the following table.

Length in mm	Number of leaves
118-126	3
127-135	5
136-144	9
145-153	12
154-162	5
163-171	4
172-180	2

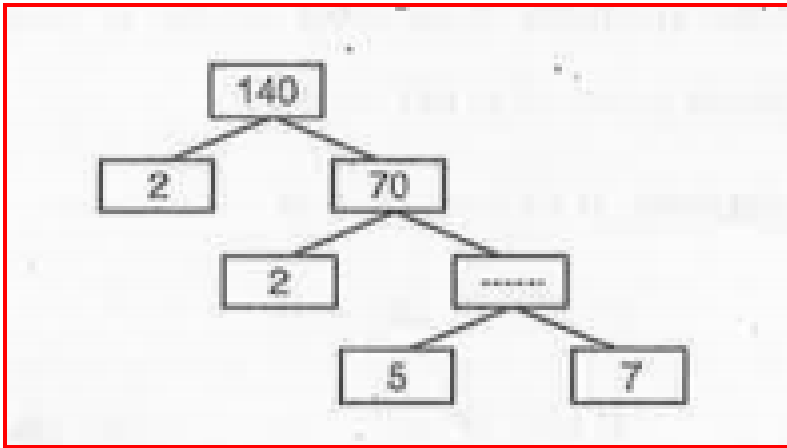
: Draw a

histogram to represent the given data.



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11. Complete the prime factor tree :



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12. The following table gives the life times of 400 neon lamps: Life time (in hours) Number of lamps :

Life time (in hours)	Number of lamps
300-400	14
400-500	56
500-600	60
600-700	86
700-800	74
800-900	62
900-1000	48

How many lamps have a life time of more than 700 hours?

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13. The following table gives the distribution of students of two sections according to the marks obtained by them :

Section A		Section B	
Marks	Frequency	Marks	Frequency
1-10	3	0-10	5
10-20	9	10-20	19
20-30	17	20-30	15
30-40	12	30-40	10
40-50	9	40-50	1

Represent the marks of the students of both the sections on the same graph by two frequency polygons. From the two polygons compare the performance of the two sections.



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14. The runs scored by two teams A and B in the first 60 balls in a cricket match are given below :

Number of balls	Team A	Team B
1-6	2	5
7-12	1	6
13-18	8	2
19-24	9	10
25-30	4	5
31-36	5	6
37-42	6	3
43-48	10	4
49-54	6	8
55-60	2	10

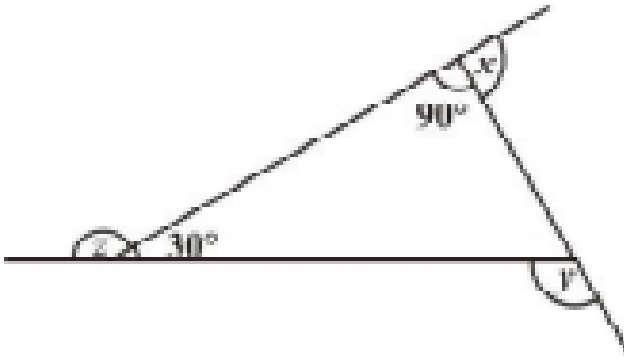
:

Represent the data of both the teams on the same graph by frequency polygons.



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15. Find $x+y+z$



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16. 100 surnames were randomly picked up from a local telephone directory and a frequency distribution of the number of letters in the English alphabet in the surnames was found as follows

Number of letters	Number of surnames
1 - 4	6
4 - 6	30
6 - 8	44
8 - 12	16
12 - 20	4

Write the class interval in which the minimum number of surnames lie.



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17. 100 surnames were randomly picked up from a local telephone directory and a frequency distribution of the number of letters in the English alphabet in the surnames was found as follows :

Number of alphabets	Number of people
1-4	6
4-6	30
6-8	44
8-12	16
12-20	4

: Write

the class interval in which the maximum number of surnames lie.



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Exercise 14 4

1. The following number of goals were scored by a team in a series of 10 matches : 2, 3, 4, 5, 0, 1, 3, 3, 4, 3

Find mean, median and mode of these scores :



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2. In a mathematics test given to 15 students, the following marks (out of 100) are recorded : 41, 39, 48, 52, 46, 62, 54, 40, 96, 52, 98, 40, 42, 52, 60 Find the mean, median and mode of this data.



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3. The following observations have been arranged in ascending order. If the median of the data is 63, find the value of x . 29, 32, 48, 50, x , $x + 2$, 72, 78, 84, 95



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4. Find the mode of 14, 25, 14, 28, 18, 17, 18, 14, 23, 22, 14, 18.

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5. Find the mean salary of 60 workers of a factory from the following table :

Salary (in ?)	Number of employees
3000	16
4000	12
5000	10
6000	8
7000	6
8000	4
9000	3
10000	1
Total	60



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6. Give one example of a situation in which the mean is not an appropriate measure of central tendency but the median is an appropriate measure of central tendency.



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7. Give one example of a situation in which the mean is not an appropriate measure of central tendency but the median is an appropriate measure of central tendency.

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Objective Type Questions

1. What is raw data or ungrouped data ?

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2. What is grouped data ?

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3. What is frequency?

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4. What is frequency table?

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5. What is bar graph ?

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6. What is histogram?

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7. What is mean?



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8. What is median ?



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9. What is mode?



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10. Class mark = $\frac{\text{lower limit} + \dots\dots\dots}{2}$



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11. is drawn by joining the middle points of the upper sides (tops) of the adjacent rectangles of a histogram by means of line segments.



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12. Mean = $\frac{\text{.....}}{\text{Total number of observations}}$



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13. When the number n of observations is odd then median is value of Observation and when number n of observations is even the median is average of and observation.

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14. An observation with maximum frequency is called the

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15. Formula for mode =

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16. What is the mode of the following data :

8,9,6, 8, 9, 8,7,5,8,9, 9, 9

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Objective Type Questions Fill In Blanks

1. The mid value of the class intervals is known as the

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