MATHS

BOOKS - PSEB

STATISTICS

Exercise

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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3. 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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4. Distance (in km) of 40 engineers from their place of 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 n 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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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

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

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6. The length ,breadth and height of a room are 6m,5m and 4m respectively. Find the cost of white washing the walls of the room and the ceiling at the rate of Rs 10.50 per m^2.

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7. 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

Make a grouped frequency distribution table for this data with class intervals as 0.00 - 0.04, 0.04 -0.08 and so on.

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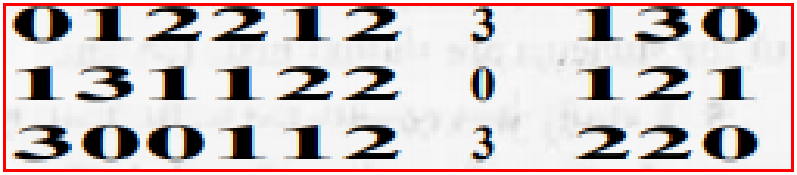
8. Three coins were tossed 30 times simultaneously.Each time thenumber of heads occurring was noted down asfollows :



Prepare a frequency distribution for the data given above

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9. 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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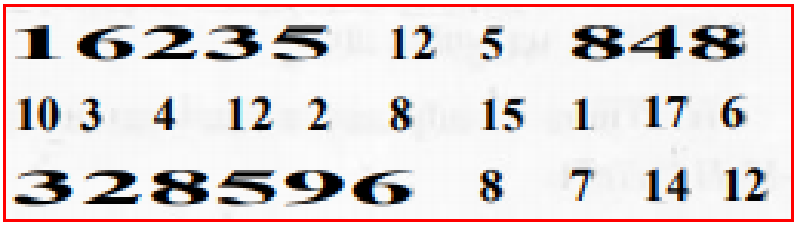
10. Thirty children were asked about the number of hours they watched TV programmes in the previous week. The results were found as follows :



: Make a frequency distribution table for this data, taking class width 5 and one of the class interval as 5— 10

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11. A company manufactures carbatteries of particular type. The lives (in years) of 40 such batteries were recorded as follows :

2.6	3.0	3.7	3.2	2.2	4.1	3.5	4.5
3.5	2.3	3.2	3.4	3.8	3.2	4.6	3.7
2.5	4.4	3.4	3.3	2.9	3.0	4.3	2.8
3.5	3.2	3.9	3.2	3.2	3.1	3.7	3.4
4.6	3.8	3.2	2.6	3.5	4.2	2.9	3.6

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

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12. 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

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Represent the information above by a bar graph

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13. 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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14. 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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15. The following table gives the life times of 400 neon lamps :

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

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Represent the given information with the help of a histogram.

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16. 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

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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 twosections.

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17. 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
43ÿ48	10	4
49-54	6	8
55-60	2	10

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

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18. 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

: Draw a histogram to depict the given information.

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19. 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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20. 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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21. 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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22. Find the mode of 14, 25, 14, 28, 18, 17, 18, 14, 23, 22, 14, 18.

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23. 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
9001)	3
10000	1
Total	60

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24. Give an example of a situation in which : the mean is an appropriate measure of central tendency.

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25. 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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Example

1. In a particular section of Class IX, 40 students were asked about the months of their birth and the following graph was prepared for the data so obtained:

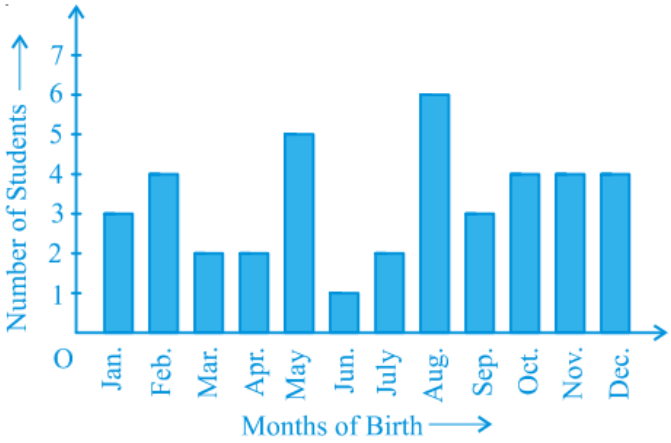

Fig. 14.1

Observe the bar graph given above and answer the following questions: (i) How many students were born in the

month of November? (ii) In which month were the maximum number of students born?

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2. A family with monthly income of Rs. 20,000 had planned the following expenditures under various heads :

Serial Number	Head	Expenditure (in Rs. 1000)
1.	Grocery	4
2.	Rent	5
3.	Education of children	5
4.	Medicine	2
5.	Fuel for vehicle	2
6.	Entertainment	1
7.	Miscellaneous	1

Draw a bar graph for the above data.

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3. A teacher analyses the performance of two sections of students in a mathematics test of 100 marks given in the following table :

Marks	Number of students
0–20	7
20–30	10
30–40	10
40–50	20
50–60	20
60–70	15
70 and above	8
Total	90

: Find the probability that a student obtained less than 20% in the mathematics test.

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4. In a city, the weekly observations made in a study on the cost of living index are given in the following table:

Table 14.10

Cost of living index	Number of weeks
140 - 150	5
150 - 160	10
160 - 170	20
170 - 180	9
180 - 190	6
190 - 200	2
Total	52

Draw a frequency polygon for the data above (without constructing a histogram).

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5. 5 people were asked about the time in a week they spend in doing social work in their community. They said 10, 7, 13, 20 and 15 hours, respectively. Find the mean (or average) time in a week devoted by them for social work.

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6. Consider the marks obtained (out of 100 marks) by 30 students of Class IX of a school:

10	20	36	92	95	40	50	56	60	70
92	88	80	70	72	70	36	40	36	40
92	40	50	50	56	60	70	60	60	88

Find the mean of the marks obtained by 30 students of Class IX of a school.

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7. The heights (in cm) of 7 students of a class are as follows:162, 164, 173, 170, 166,168, 167 Find the median

of this data.

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8. The points scored by a Kabaddi team in a series of matches are as follows: 17, 2, 7, 27, 15, 5, 14, 8, 10, 24, 48, 10, 8, 7, 18, 28 Find the median of the points scored by the team.

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9. Find the mode of the following marks (out of 10) obtained by 20 students: 4, 6, 5, 9, 3, 2, 7, 7, 6, 5, 4, 9, 10, 10, 3, 4, 7, 6, 9, 9

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10. Consider a small unit of a factory where there are 5 employees : a supervisor and four labourers. The labourers draw a salary of ₹5,000 per month each while the supervisor gets ₹ 15,000 per month. Calculate the mean, median and mode of the salaries of this unit of the factory.

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