statistics class-9 MathsExercise 14.2(Solved exercise)

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

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

(ii) Which month or season do you think this data is about?

(iii) What is the range of this data?

Solution:

(i) Since the given data is very large, we construct a grouped frequency distribution table of class size 2.

, class interval will be 84-86, 86-88, 88-90, 90-92 and so on. The data is represented in the grouped frequency distribution table as: of

Relative humidity (in %)	Frequency
84-86	1
86-88	1
88-90	2
90-92	2
92-94	7
94-96	6
96-98	7
98-100	4
Total	30

(ii) The humidity is very high in the given data. Since the humidity is observed to be high during the rainy season, the data here must be about rainy season.

(iii) The range of a data = The maximum value of the data–minimum value of the data

= 99.2−84.9

= 14.3

4. The heights of 50 students, measured to the nearest centimeters, have been found to be as 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 given above by a grouped frequency distribution table, taking the class intervals as 160 – 165, 165 – 170, etc.

(ii) What can you conclude about their heights from the table?

Solution:

(i) The data given in the question can be represented by a grouped frequency distribution table, taking the class intervals as 160 – 165, 165 – 170, etc., as:

Height (in cm)	No. of Students (Frequency)
150-155	12
155-160	9
160-165	14
165-170	10
170-175	5
Total	50

(ii) It can be concluded from the given data and the table that 35 students, i.e. more than 50% of the total students, are shorter than 165 cm.

5. 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

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

(ii) For how many days, was the concentration of Sulphur dioxide more than 0.11 parts per million?

Solution:

(i) The grouped frequency distribution table for the data given in the question with class intervals as 0.00 – 0.04, 0.04 – 0.08, and so on is given below

Concentration of sulphur dioxide in air (in ppm)	Frequency
0.00 – 0.04	4
0.04 – 0.08	9
0.08 – 0.12	9
0.12 – 0.16	2
0.16 – 0.20	4
0.20 – 0.24	2
Total	30

(ii) The number of days in which the concentration of sulphur dioxide was more than 0.11 parts per million = 2+4+ 2 = 8