NCERT Solutions Class 10 Maths
Chapter 13: Surface Areas and Volumes
Exercise 13.3

Complete Solutions

Question 1

QUESTION

The following frequency distribution gives the monthly consumption of electricity of 68 consumers of a locality. Find the median, mean and mode of the data and compare them.

Monthly consumption (in units)	Number of consumers
65 - 85	4
85 - 105	5
105 - 125	13
125 - 145	20
145 - 165	14
165 - 185	8
185 - 205	4

ANSWER

Median = 137 units

Mean = 137.05 units

Mode = 135.76 units

The three measures of central tendency are approximately the same in this case.

Question 2

If the median of the distribution given below is 28.5, find the values of *x* and *y*.

Class interval	Frequency
0 - 10	5
10 - 20	x
20 - 30	20
30 - 40	15
40 - 50	y
50 - 60	5
Total	60

ANSWER

x = 8, y = 7

Question 3

A life insurance agent found the following data for distribution of ages of 100 policy holders. Calculate the median age, if policies are given only to persons having age 18 years onwards but less than 60 years.

Age (in years)	Number of policy holders
Below 20	2
Below 25	6
Below 30	24
Below 35	45
Below 40	78
Below 45	89
Below 50	92
Below 55	98
Below 60	100

ANSWER

Median age = 35.76 years

Question 4

The lengths of 40 leaves of a plant are measured correct to the nearest millimetre, and the data obtained is represented in the following table. Find the median length of the leaves.

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

Hint: The data needs to be converted to continuous classes for finding the median, since the formula assumes continuous classes.

ANSWER

Median length = 146.75 mm

Question 5

The following table gives the distribution of the life time of 400 neon lamps. Find the median life time of a lamp.

Life time (in hours)	Number of lamps
1500 - 2000	14
2000 - 2500	56
2500 - 3000	60
3000 - 3500	86
3500 - 4000	74
4000 - 4500	62
4500 - 5000	48

ANSWER

Median life = 3406.98 hours

Question 6

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

Number of letters	Number of surnames
1 - 4	6
4 - 7	30
7 - 10	40
10 - 13	16
13 - 16	4
16 - 19	4

Determine the median number of letters in the surnames. Find the mean number of letters in the surnames. Also, find the modal size of the surnames.

ANSWER

Median = 8.05

Mean = 8.32

Modal size = 7.88

Question 7

The distribution below gives the weights of 30 students of a class. Find the median weight of the students.

Weight (in kg)	Number of students
40 - 45	2
45 - 50	3
50 - 55	8
55 - 60	6
60 - 65	6
65 - 70	3
70 - 75	2

ANSWER

Median weight = 56.67 kg

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