

## SES'S L.S.RAHEJA COLLEGE OF ARTS AND COMMERCE

Course: Business Statistics

Unit: Unit 2 sem II

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1. Find Median and quartiles for each of the following data:

a.

Class Intervals	Frequency
0 – 25	20
25 – 50	25
50 – 75	20
75 - 100	35

b.

Class Intervals	Frequency
0 -20	10
20 – 40	23
40 -60	30
60 – 80	26
80 - 100	11

Solution:

Class Intervals	Frequency	Less than cumulative frequency
0 -20	10	10
20 – 40 ( $Q_1$ )	23	33
40 -60 (MEDIAN CLASS)	30	63
60 – 80 ( $Q_3$ )	26	89
80 - 100	11	100

$$m = \frac{100}{2} = 50 = \frac{N}{2}$$

$$q_1 = \frac{100}{4} = 25 = \frac{N}{4}$$

$$q_3 = \frac{3 \cdot 100}{4} = 75 = \frac{3N}{4}$$

$$M = l_1 + \frac{(l_2 - l_1)(m - cf)}{f}$$

$$= 40 + \frac{(60 - 40)(50 - 33)}{30}$$

$$= 51.333$$

$$Q_1 = l_1 + \frac{(l_2 - l_1)(q_1 - cf)}{f}$$

$$= 20 + \frac{(40 - 20)(25 - 10)}{23}$$

$$= 33.04$$

$$Q_3 = l_1 + \frac{(l_2 - l_1)(q_3 - cf)}{f}$$

$$= 60 + \frac{(80 - 60)(75 - 63)}{26}$$

$$= 69.23$$

c.

Class Intervals	Frequency
0 – 10	16
10 – 20	24
20 – 30	35
30 -40	25
40 -50	20

I have solved for you sub question b. students are ask to solved sub question a. and c. (answers will be given in next tutorial lessons). we will learn about standard deviation, mean and mode in our next tutorial lesson.