

Student Name: _____

Roll No: _____

Semester: Spring-2022

Time Allowed: 15 Min.

Course: Probability & Statistics

Total Marks: 10

Program: BS (CS & SE)

Examination: Quiz # 01 (Sec: B)

Date: 03 / 03 / 2022

Weightage : 2.5

Problem 1

Find the Interquartile range (IQR) of the following data:

| | | | | | | | | | |
|----|-----|----|----|----|----|----|----|----|----|
| 70 | 36 | 43 | 69 | 82 | 48 | 34 | 62 | 35 | 15 |
| 59 | 139 | 46 | 37 | 42 | 30 | 55 | 56 | 36 | 82 |
| 38 | 89 | 54 | 25 | 35 | 24 | 22 | 9 | 56 | 19 |

Problem 2

Which statistic is best for measuring the central tendency of the data. Give reason.

Sol 1 We will first arrange the data in ascending order, so we have :

9, 15, 19, 22, 24, 25, ³⁰34, 35, 35, 36, 36, 37, 38, 42, 43, 46, 48, 54, 55, 56, 56, 59, 62, 69, 70, 82, 82, 89, 139.

Here $n = 30$ (Number of points)

For finding θ_1 we have $P = 1/4$

So $np = 30\left(\frac{1}{4}\right) = \underline{7.5}$ (Not an integer)

So θ_1 is the 8th ~~one~~ value.

So $\theta_1 = \boxed{34}$


~~Next~~ Next for finding θ_3 we have $P = 3/4$

So $np = 30\left(\frac{3}{4}\right) = \frac{90}{4} = \underline{22.5}$ (Not an integer)

So $\theta_3 = \boxed{59}$ Thus $\boxed{IQR = 59 - 34 = 25}$

Ans

Sol 2 Sample mean is the best statistic for measuring the central tendency of the data because it uses all the data values in the calculation. Furthermore it shows the balancing point of the ^{whole} data.



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