

Pravin Patil

Stats quiz

IS No: -1

Q. 16

gives Ages - soccer match.

1. Sort the array

1 12 13 14 15 15 17 17 18 18 19
2 20 20 21 22 23 23 23 27 27 29 29
3 31 35 35 37 37 38 38
4 40 40 42 45 49
5 53 53
6 65

Sorted data:-

140 ✓ 12, 13, 14, 15, 15, 17, 17, 18, 18, 19
284 20, 20, 21, 22, 23, 23, 23, 27, 27, 29, 29
213 31, 35, 35, 37, 37, 38, 38
216 40, 40, 42, 45, 49
111 53, 53
65 65

$$\text{mean} = \frac{\text{total sum}}{\text{total No}} = \frac{1007}{35} = 28.77$$

median:- Since 35 is odd
= $\left(\frac{35}{2}\right) + 1 = 18^{\text{th}}$ element

Median = 27

mod = 23 (occurring 3 times)

Q. 16

Find Q1

Since 1st half contains 18 element.

Avg. $\left(\frac{n}{2}\right)$ and $\left(\frac{n}{2} + 1\right)$

$$= \frac{38}{2}, \left(\frac{38}{2} + 1\right) = (19, 20)$$

(9th + 10th element) / 2

$$Q1 = \frac{18 + 19}{2} = 18.5$$

Q3 $\Rightarrow n = 17$ (2nd half)

$$\Rightarrow \left(\frac{17}{2}\right) + 1 = 9$$

Q3 $\Rightarrow 38$

Ans:- Five number summary

Min = 12

Q1 = 18.5

max = 65

Q3 = 38

mean = 28.77

mode = 23

median = 27

$$\text{std. dev} = \sqrt{\sum_{i=1}^n \frac{(x_i - \bar{x})^2}{n-1}}$$

1304 = 15 14 13 12 12 10 10 9 9 8

215 7 7 6 5 4 4 4 0 0 2 2

536 4 8 8 10 10 11 11

1371 13 13 15 18 22

676 26

$$1444 = \frac{38}{\sqrt{164.5}}$$

$$\text{std. dev} = 12.82$$