

9.1 Measures of Center and Spread - Class & Homework

1

Find the mean and median of the data set.

Niles scored 60, 64, 62, 61, 63, and 80 on his 6 geography tests.

The mean is .

The median is .



	G
5	60
6	64
7	62
8	61
9	63
10	80

Find the mean.

Divide the sum by the numbers of data values.

$$\frac{390}{6} = 65$$

Find the median.

Rewrite the values in increasing order.

~~60~~, ~~61~~, 62, 63, ~~64~~, ~~80~~

Find the mean of the middle two values.

$$\frac{62 + 63}{2} = 62.5$$

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=MEDIAN(G5:G10)
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=AVERAGE(G5:G10)
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2 Find the median, range, and interquartile range for the given data set.

21, 31, 26, 25, 28, 26

The median is .

Order the data values.

~~21~~, ~~25~~, 26, 26, ~~28~~, ~~31~~

The median is the middle value in a set when the values are arranged in numerical order.

$$\text{Median} = \frac{26 + 26}{2} = 26$$

The range is .

The range is the difference between the greatest and the least data values.

High - Low

$$\text{Range} = 31 - 21 = 10$$

The IQR is .

The interquartile range (IQR) of a data set is the difference between the third and first quartiles. It represents the range of the middle half of the data.

21, 25, 26, 26, 28, 31

$$Q_1 = 25 \text{ and } Q_3 = 28$$

$$\begin{aligned} \text{IQR} &= Q_3 - Q_1 \\ &= 28 - 25 \\ &= 3 \end{aligned}$$

4 Find the standard deviation of 42, 55, 46, 45, 48, 46. If necessary, round your answer to the nearest tenth.

Step 1: Find the mean.

$$\text{mean} = \frac{42 + 45 + 46 + 46 + 48 + 55}{6} = \frac{282}{6} = 47^*$$

$$S = \sqrt{\frac{\sum(X - \bar{X})^2}{N}}$$

where S = the standard deviation of a sample,
 Σ means "sum of,"
 X = each value in the data set,
 \bar{X} = mean of all values in the data set,
 N = number of values in the data set.

*add up all the numbers, then divide by how many numbers there are.

Step 2: Calculate the Difference and Square.

Data Values - Means		=	Square each ²	
42	-47	=	-5	25
55	-47	=	8	64
46	-47	=	-1	1
45	-47	=	-2	4
48	-47	=	1	1
46	-47	=	-1	1

Step 3: Find the mean again, this of Square values.

$$\text{mean} = \frac{25 + 4 + 1 + 1 + 1 + 64}{6} = \frac{96}{6} = 16$$

Step 4: Take the Square Root.

$$\sqrt{16} = 4$$

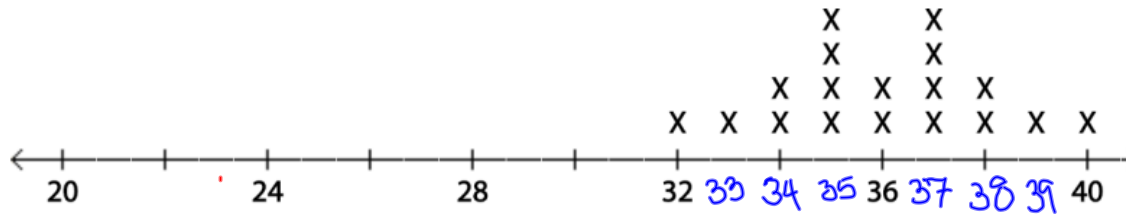
If necessary, round your answer to the nearest tenth.



If it's 5 or more, round UP.

10

The data plot shown represents the age of the members of a jogging club.



*Write each number with x on it (including repeated values).

32, 33, 34, 34, 35, 35, 35, 35, 36, 36, 37, 37, 37, 37, 38, 38, 39, 40

Find the median, range, and interquartile range of the data. Is each statement True?

median ~~32, 33, 34, 34, 35, 35, 35, 35, 36, 36, 37, 37, 37, 37, 38, 38, 39, 40~~

A. The median age is 36.



Yes



No

range High-low = $40 - 32 = 8$

B. The range of ages is 8.

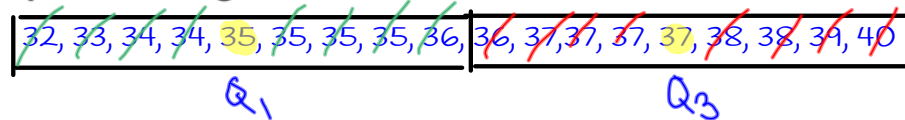


Yes



No

interquartile range



$$IQR = Q_3 - Q_1 = 37 - 35 = 2$$

C. The interquartile range is 4.



Yes



No