**Part 2**

1. What is the mean? Show calculation.

***answer:***

The mean is the most common average.

Mean = (The formula of finding a mean)

***calculation:***

Mean =

1. What is the median? Show calculation.

***answer:***

The median reflects the middle value when observations are ordered from least to most.

***calculation:***

17, 14, 10, 19, 16, 15, 16, 18, 13, 19

10, 13, 14, 15, 16, 16, 17, 18, 19, 19 (Here it was ordered from least to most)

(The median is equal to 16, when the total number of points is even, the median value is equal to the value halfway between the values of the two average points.)

1. What is the variance? Show calculation.

***answer:***

The variance is a mean of all squared deviation scores.

***calculation:***

*Step 1 (finding the mean)*

Mean =

*Step 2 (subtracting the mean from each data value)*

17 – 15.7 = 1.3

14 – 15.7 = - 1.7

10 – 15.7 = - 5.7

19 – 15.7 = 3.3

16 – 15.7 = 0.3

15 – 15.7 = 0.7

16 – 15.7 = 0.3

18 – 15.7 = 2.3

13 – 15.7 = - 2.7

19 – 15.7 = 3.3

*Step 3 (Squaring each result)*

1.3\*1.3 = 1.69

-1.7 \* (-1.7) = 2.89

-5.7 \* (-5.7) = 32.49

3.3 \* 3.3 = 10.89

0.3 \* 0.3 = 0.09

0.7 \* 0.7 = 0.49

0.3 \* 0.3 = 0.09

2.3 \* 2.3 = 5.29

-2.7 \* (-2.7) = 7.29

3.3 \* 3.3 = 10.89

*Step 4 (Finding the sum of squared values)*

1.69 + 2.89 + 32.49 + 10.89 + 0.09 + 0.49 + 0.09 + 5.29 + 7.29 + 10.89 = 72.1

*Step 5 (Last step, finding the variance)*

Variance =

(This is a calculation of sample variance)

1. What is the standard deviation? Show calculation.

***answer:***

The standard deviation is a rough measure of the average amount by which scores deviate on either side of their mean.

***calculation:***

Standard deviation = = 2.830391

1. What is the minimum?

The minimum is the lowest value.

Due to this definition 10 is the minimum value in this 17, 14, 10, 19, 16, 15, 16, 18, 13, 19 set

1. What is the maximum?

The maximum is the largest value.

Due to this definition 19 is the largest value in this 17, 14, 10, 19, 16, 15, 16, 18, 13, 19 set

1. What is the first and third quartiles? Show/Explain.

***answer:***

The first quartile is the median of the lower half of the data set. 25% of the numbers in the dataset lie below the first quartile.

The third quartile is the median of the upper half of the data set. This means that about 75% of the numbers in the data set lie below the third quartile.

***calculation:***

Calculation of the first quartile ( )

Step 1 (ordering numbers in the dataset in ascending order)

10, 13, 14, 15, 16, 16, 17, 18, 19, 19

Step 2 (determining the quantity of numbers in the data set)

n = 10

Step 3 (using the formula for calculation the first quartile)

= 2.75

By this formula we found that the desired number is located between the numbers in the 2nd and 3rd positions, on the 2nd and 3rd positions are the numbers 13 and 14. Then we need to calculate mean of these numbers:

= 13.5

In that way the first quartile ( ) equals to 13.5

Calculation of the third quartile (

Step 1 (ordering numbers in the dataset in ascending order)

10, 13, 14, 15, 16, 16, 17, 18, 19, 19

Step 2 (determining the quantity of numbers in the data set)

n = 10

Step 3 (using the formula for calculation the third quartile)

= 8.25

By this formula we found that the desired number is located between the numbers in the 8th and 9th positions, on the 8th and 9th positions are the numbers 18 and 19. Then we need to calculate mean of these numbers:

= 18.5

In that way the third quartile ( equals to 18.5

1. What is the five numbers summary?

***answer:***

A summary of five numbers gives us a rough idea of what your data set looks like.

A five number summary consists of:

1. The minimum,
2. Q1 (the first quartile),
3. The median,
4. Q3 (the third quartile),
5. The maximum,