Algebra II

Introduction to Standard Deviation

Name _____

Hour _____

On the number lines below, make a dot plot of each data set. Mark the mean and median for the data set on each number line. State the range of each data set.

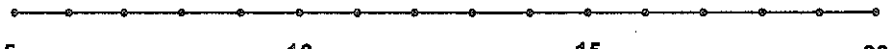
Data Set A: 6, 6, 8, 10, 10

Data Set B: 14, 14, 16, 18, 18

Data Set C: 6, 6, 6, 8, 10, 10

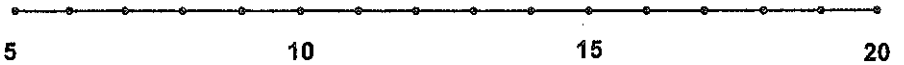
Data Set D: 6, 6, 8, 10, 20

Set A:



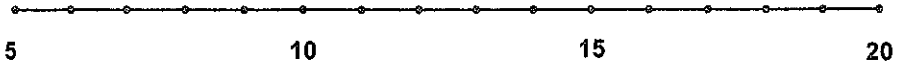
Range _____

Set B:



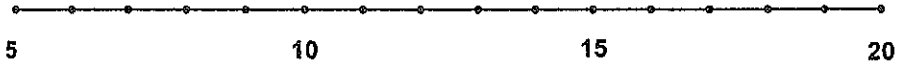
Range _____

Set C:



Range _____

Set D:



Range _____

Calculate the Standard Deviation of a Population (σ) for each data set and write this value under the range on page one.

Data Set A

Data	Mean	Data – Mean	(Data – Mean)^2

Sum (Σ) of (Data – Mean)^2 = _____

$$\frac{Sum\ of\ (Data-Mean)^2}{Number\ of\ Data\ Points} = \_\_\_\_\_$$

$$\sigma = \sqrt{\frac{Sum\ of\ (Data-Mean)^2}{Number\ of\ Data\ Points}} = \_\_\_\_\_$$

Data Set B

Data	Mean	Data – Mean	(Data – Mean)^2

Sum (Σ) of (Data – Mean)^2 = _____

$$\frac{Sum\ of\ (Data-Mean)^2}{Number\ of\ Data\ Points} = \_\_\_\_\_$$

$$\sigma = \sqrt{\frac{Sum\ of\ (Data-Mean)^2}{Number\ of\ Data\ Points}} = \_\_\_\_\_$$

Data Set C

Data	Mean	Data – Mean	(Data – Mean)^2

Sum (Σ) of (Data – Mean)^2 = _____

$$\frac{Sum\ of\ (Data-Mean)^2}{Number\ of\ Data\ Points} = \_\_\_\_\_$$

$$\sigma = \sqrt{\frac{Sum\ of\ (Data-Mean)^2}{Number\ of\ Data\ Points}} = \_\_\_\_\_$$

Data Set D

Data	Mean	Data – Mean	(Data – Mean)^2

Sum (Σ) of (Data – Mean)^2 = _____

$$\frac{Sum\ of\ (Data-Mean)^2}{Number\ of\ Data\ Points} = \_\_\_\_\_$$

$$\sigma = \sqrt{\frac{Sum\ of\ (Data-Mean)^2}{Number\ of\ Data\ Points}} = \_\_\_\_\_$$

Write a formula for calculating the Standard Deviation of a Population.

Describe the relation between the standard deviation and the data set. Refer to specific data sets in your description.

Define Standard Deviation.