

Name: _____

Show work needed to justify your answer.

Date: _____

HW: # 26c: Math IBSL - Standard 25 - Measures of Dispersion (day 4)

5 points

1 a Find the mean, median and mode of 1, 3, 5, 5, 8.

$$(a) \text{ mean: } \frac{23}{5} = \boxed{4.4}$$

b Add 4 to each value and find the mean, median and mode of the new data set.

$$\text{med: } \boxed{5}$$
$$\text{mode } \boxed{5}$$

c Describe the effect that adding 4 to each value has on the mean, median and mode.

(b) 5 7 9 9 12

$$\text{mean: } \boxed{8.4}$$

$$\text{med. } \boxed{9}$$

$$\text{mode: } \boxed{9}$$

(c) All went up by 4

2 a Find the standard deviation and variance of the set 7, 9, 3, 0, 1, 8, 6, 4, 10, 5, 5.

b Multiply each member of the data set by 3 and find the new standard deviation and variance.

c Describe the effect that multiplying each member by 3 has on the mean and standard deviation.

$$(a) \begin{cases} \sigma = 3.02 \\ \sigma^2 = 9.11 \end{cases}$$

(b) 21, 27, 9, 0, 3, 24, 18, 12, 30, 15, 15

$$\sigma = 9.05$$

$$\sigma^2 = 82$$

(c) Basically 3 times the original S.D And 9 times the original Variance.

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- 3 The mean age of a group of friends at school is 17.2 years, their median age is 17, and the standard deviation of their ages is 0.5 years. They meet again 4 years later at a school reunion. What are the new mean, median and standard deviation of their ages?

mean: 21.2
median: 21
S.D. = 0.5 (still)

- 4 All of the items in a data set are doubled. State which of the following are also doubled: mean, median, standard deviation, variance.

Standard Deviation
mean
median.

(NOT variance which would quadruple)