

# Statistics 101 - Homework 1

Name: \_\_\_\_\_ Class Number: \_\_\_\_\_

1) About the Mode: indicate whether the following statements are True or False

- a. The mode is the most frequent value in a distribution.
- b. There cannot be more than one mode per distribution.
- c. The mode is influenced by extreme values.
- d. The mode's value can change by organizing the data into different categories.
- e. The mode is only applicable to qualitative variables.

2) About the Median: indicate whether the following statements are True or False

- a. The median is the central value with 50% of the values larger than it and 50% smaller.
- b. There can be more than one median per distribution.
- c. The median is affected by extreme values.
- d. The median's value is rather stable even when data are organized into different categories.
- e. The median is applicable to both qualitative and quantitative variables.

3) About the Average: indicate whether the following statements are True or False

- a. The average is the sum of all entries divided by half the number of entries.
- b. There is only one average per distribution.
- c. The average is not influenced by extreme values.
- d. The average is applicable to quantitative variables only.
- e. The average is always greater than the median.

4) True or False. If a distribution is skewed to the right,

- a. the mean is less than the median
- b. the mean and the median are equal
- c. the mean is greater than the median

5) The highway mileages of 13 compact cars are:

	model	mileage
1	Aston Martin Vanquish	19.00
2	Audi TT Coupe	29.00
3	BMW 325CI	27.00
4	BMW 330CI	28.00
5	BMW M3	23.00
6	Jaguar XK8	26.00
7	Jaguar XKR	23.00
8	Lexus SC 430	23.00
9	Mini Cooper	32.00
10	Mitsubishi Eclipse	31.00
11	Mitsubishi Spyder	29.00
12	Porsche Cabriolet	26.00
13	Porsche Turbo 911	22.00

- a. Calculate the median:
- b. Calculate the mode:
- c. Calculate the mean:
- d. Calculate the range:
- e. Calculate  $Q_1$  (the 1st quartile)
- f. Calculate  $Q_3$  (the 3rd quartile)
- g. Calculate the Interquartile Range (IQR):
- h. Calculate the Variance Range (Var):
- i. Calculate the Standard Deviation (SD):

**6)** A small accounting firm pays each of its 5 clerks \$35000, 2 junior accountants 80000 each, and the firm's owner \$320000.

- a. What is the mean salary paid at this firm?
- b. How many of the employees earn less than the mean?
- c. What is the median salary?

**7)** The firm in the previous question gives no raises to the clerks and junior accountants, while the owner's take increases to \$455000.

- a. How does this change affect the mean?
- b. How does it affect the median?