

STA 2023 REVIEW I – Chapters 1-3 (not all-inclusive)

1. True/False
 - a) The Empirical Rule applies to mound-shaped data
 - b) A sample is the complete set of observations or measurements of interest to an experimenter.
 - c) The stem-and-leaf display is a tool used to graph qualitative data
 - d) The union of two events, A and B, is the event containing all the sample points that are either in event A or event B or both events A and B.
 - e) In a skewed right distribution, the mean is greater than the median

2. Use the sample below to find the following:

6 8 0 4 -3 6

- a) mean
 - b) median
 - c) mode
 - d) standard deviation
 - e) range

3. Identify the following variables as Qualitative or Quantitative
 - a) The declared major of a college student
 - b) The cost of a fast-food meal
 - c) The favorite brand of soft-drink of a consumer

4. At one retail store, the mean time for a person to complete an application for employment is 24.5 minutes with standard deviation 3.9 minutes. What is the probability a randomly selected applicant takes longer than 37 minutes to fill out the application?

5. Suppose 60% of a group of American citizens is registered to vote and of those registered, 85% voted in the last Presidential Election. What is the probability a randomly selected citizen is both registered to vote and voted in the last Presidential Election?

6. A group of faculty and students were surveyed regarding a campus issue; their opinions are recorded below. Use the following table to answer the following questions:

OPINION	In Favor	Opposed	No Opinion
Faculty	20	34	0
Student	93	70	23

- What proportion of the responses were in opposition to the issue?
- What proportion of those opposed were faculty?
- What proportion of the responses were either from students or in favor of the issue?
- Are the events S(Student) and N(No Opinion) mutually exclusive events? Thoroughly justify your answer.
- Are the events S(Student) and N(No Opinion) independent events? Thoroughly justify your answer.

KEY (brief answers provided; show all work on the exam)

- T, F, F, T, T
- a) 3.5 b) 5 c) 6 d) 4.2 e) 11
- Qual, Quan, Qual
- At most 11%
- .51
- a) .43 b) .33 c) .86 d) No, $P(S \cap N) = .10 \neq 0$
e) No, $P(S) = .78 \neq 1.00 = P(S|N)$