AS1 (Assignment 1): Unit 1

Introduction to Terminology, Scales of Measurement, Notation and Basic Computation

1. A researcher investigates the effects of amphetamine on memory. The researcher selects a random sample of 50 undergraduate students from a major New Jersey University. Half (25) of the students selected receive amphetamine while studying a word list and half (25) of the students receive a placebo. For this study

a. Identify the population: NJCU undergraduate students 50 students

b. Identify the sample: half of the sample (25) receiving amphetamine

2. Define the terms: half of the students will receive of placebo and half will recipe the medication

a. Population the entire group of the undergrad students

b. Sample thegroup that the researcher chose from NJCU

c. Parameter the summarized data that will be collected from the population

d. Statistic the summarized data from the sample

3. Name 3 descriptive statistics methods

1. The central tendency

2. The measure of position

3. And the frequency distribution

Please place a T if the statement is true and an F if the statement is falsa in the space provided.

___T___4. A researcher calculates a mean from a population. Her mean is an example of a parameter.

_____T_5. A researcher calculates a mean from a sample set of data. His mean is a statistic.

___T___6. The entire group of alcoholics in the state of NJ is an example of a population.

__F____7. A researcher who selects a sample from a population should expect no difference between the sample mean statistic and the true population parameter.

__T____8. The participants in a research study are classified as high, medium, or low in self-esteem. This classification involves measurement on an ordinal scale.

___F___9. A continuous variable must be measured on a nominal or an ordinal scale.

___F___10. Students in an introductory art class are classified as art majors and non-art majors. This is an example of measurement on an ordinal scale.

__F____11. Men's shirt sizes are classified as small, medium, large, and extra-large. This is an example of measurement on an interval scale.

__T____12. A researcher records the number of errors a rat makes running a maze. This is an example of measurement on a ratio scale.

__F____13. To determine how much difference there is between two individuals, you must use either a nominal or interval scale of measurement.

__F____14. If a researcher measures two individuals on a nominal scale, it is possible to determine which individual has the smaller score.

__F____15. Recording the number of students who are absent each day at a high school would be an example of measuring a continuous variable.

___F___16. A track coach records how much time each runner takes to complete the 100-yard dash. This is an example of measuring a discrete variable.

__T____17. Gender is a discrete variable while age is a continuous variable.

___F___18. A data set is described as consisting of n = 15 scores. Based on the notation being used, the data set is a population.

_F_____19. To compute $(\Sigma X)^2$, you have to remember to first square all of the scores.

__T___20. For the following scores, 1, 3, 5, $\Sigma X^2 = 35$.

__F___21. For the following scores, 4, 4, 2, 0, $(\Sigma X)^2 = 36$.

22. Statistical techniques are classified into two major categories: Name the categories and differentiate one major difference between them:

Inferential and descriptive are the two statistical techniques. Inferential tests the hypothesis to make a conclusion about the data and descriptive is using only the data to describe the properties.

23. You (1) select 30 people from a population, (2) measure the IQ of those 30 people, and (3) calculate a mean statistic = 110. What should you expect as far as the mean parameter? That is, would you expect the corresponding mean parameter to also be 110?

I believe the mean parameter would be different because it is describing the whole population. With the mean statistic, we are only describing the sample.

24. Calculate each value requested for the following set of scores. Scores: 1, 7, 6, 4, 3, 0, 0, 1

N = 8 ΣX = 22 ΣX^2 = 112 $(\Sigma X)^2$ = 484

25. For the following set of scores, find the value of each expression: 10, 11, 10, 9, 7

ΣX = 47

ΣX^2 = 451

$(EX)^2$ = 2209

26. For the following set of scores, find the value of each expression

X
4
0
-3

a. ΣX = 1

b. ΣX^2 =25_

c. $(EX)^2$ = 1

27. For the following set of scores, find the value of each expression:

X
6
-2
3
-1

n= 4

EX= 6

EX^2 = 50

$(EX)^2$ = 36

28. Two scores, X and Y, are recorded for each of *n* = 4 subjects. For these scores, find the value of each expression.

Subject	X	Y
A	4	3
B	0	7
C	-1	5
D	3	2

ΣX = 6

$\Sigma Y = 17$

29. For each set of scores at the right, find the value of each expression.

X
2
4
0
-2

n= 4

EX= 2

EX^2 =16

$(EX)^2$ = 4