Course Name: STA-201

Assignment 1

Question 1: Explain whether each of the following constitutes a population or a sample.

a. Pounds of bass caught by all participants in a bass fishing derby
b. Credit card debts of 100 families selected from a city
c. Number of home runs hit by all Major League baseball players in the 2009 season
d. Number of parole violations by all 2147 parolees in a city
e. Amount spent on prescription drugs by 200 senior citizens in a large city

Question 2: Thoughts on Evolution. In an article titled "Who has designs on your student's minds?" (*Nature*, Vol. 434, pp. 1062–1065), author G. Brumfiel postulated that support for Darwinism increases with level of education. The following table provides percentages of U.S. adults, by educational level, who believe that evolution is a scientific theory well supported by evidence.

Education	Percentage
Postgraduate education	65%
College graduate	52%
Some college education	32%
High school or less	20%

a. Do you think that this study is descriptive or inferential? Explain your answer.
b. If, in fact, the study is inferential, identify the sample and population.

Question 3: In a psychological study linking a person's attitude with his or her perception of human faces, 165 subjects were asked to judge the attributes of each of two unknown faces. It was proven that manipulated attitude significantly influences the judgment of facial dimensions that are evaluatively loaded (e.g., smiling or frowning mouth).

a. Do you think this study is descriptive or inferential? Explain your answer.
b. If, in fact, the study is inferential, identify the sample and population.

Question 4: Indicate which of the following variables are quantitative and which are qualitative.

- Number of typographical errors in newspapers
- Monthly TV cable bills
- Spring break locations favored by college students
- Number of cars owned by families
- Lottery revenues of states
- Number of persons in a family
- Colors of cars

- Marital status of people
- Time to commute from home to work
- Number of errors in a person's credit report

Question 5: Classify the quantitative variables in Exercises as discrete or continuous

Question 6: The following data give the results of a sample survey. The letters Y, N, and D represent the three categories.

D N N Y Y Y N Y D Y
Y Y Y Y N Y Y N N Y
N Y Y N D N Y Y Y Y
Y Y N N Y Y N N D Y

a. Prepare a frequency distribution table.
b. Calculate the relative frequencies and percentages for all categories.
c. What percentage of the elements in this sample belong to category Y?
d. What percentage of the elements in this sample belong to category N or D?
e. Draw a pie chart for the percentage distribution.

Question 7: Thirty adults were asked which of the following conveniences they would find most difficult to do without: television (T), refrigerator (R), air conditioning (A), public transportation (P), or microwave (M). Their responses are listed below.

R A R P P T R M P A
A R R T P P T R A A
R P A T R P R A P R

a. Prepare a frequency distribution table.
b. Calculate the relative frequencies and percentages for all categories.
c. What percentage of these adults named refrigerator or air conditioning as the convenience that they would find most difficult to do without?
d. Draw a bar graph for the relative frequency distribution.

Question 8: The *World Health Organization (WHO)* collects data on health across the globe. The following table from the 2014*World Health Statistics* report published by WHO provides data on the life expectancy (the average number of years that an infant can expect to live, if he or she lived a life exposed to the sex- and age specific death rates persisting at the time of his or her birth, for a specific year, and in a given region) of males and females as of 2012.

	Life Expectancy (years)	
WHO region	**Males Females**	**Males Females**
Africa	56	59
America	74	79
South-East Asia	66	69
Europe	72	80
Eastern Mediterranean	66	70
Western Pacific	74	78

a. Obtain relative-frequency distributions of life expectancy for males and females.
b. Draw a pie chart for both males and females.
c. Compare your pie charts.
d. Construct bar chart and comment on that.

Question 9:
The following data represent the daily income (in Tk) of 30 workers-
65, 80, 55, 60, 70, 72, 85, 50, 52, 60, 57, 87, 75, 68, 65, 56, 78, 80, 86, 62, 70, 60, 50, 56, 74, 66, 62, 88, 80, 75.

a. Construct a frequency distribution table using appropriate class interval.
b. Construct histogram and frequency polygon.

Question 10:
The following table represents the weight (in kg) of the students of a specific University.

Weight (in kg) (Class interval)	Frequency (for male)	Frequency (for female)
30 -40	5	8
40-50	7	10
50-60	15	12
60-70	10	8
70-80	8	5
80-90	5	2

Use appropriate graph to compare the weight of two groups.