

**Exercise 1.**

1. Fisheries Co. conducted a study on fishing practices among its 2366 registered fishermen in 1996. A random selection of 150 fishermen was asked to answer a group of questions. The answers gathered were organized, studied, and analyzed. A conclusion was reached to further guide these fishermen on safe fishing practices.
  - (a) Describe the population.
  - (b) Describe the sample.
  
2. A recent survey conducted by the New York Times Newspaper asked 1200 subscribers at random if they were satisfied with municipality services. 68% answered yes, 29% answered no, and 3% did not care.
  - (a) Describe the population.
  - (b) Describe the sample.
  
3. In order to open a new shopping center in London, a private company was hired to make a feasibility study. A survey was conducted among 15000 shoppers in different places in London. Based on the findings, the company allocated floor area to the different categories of food, men's fashion, women's fashion, playing grounds, etc...
  - (a) Describe the population of this example. Does the population consist of all the residents in the UK?
  - (b) Describe the sample of the example.
  
4. Suppose that there are 10 000 grocery stores in Madrid. Each store sells milk. We are interested in knowing the average price per liter charged by these stores. We select a sample of 100 stores from the population of stores, and determine the price each of these stores charges for milk. We will reach a conclusion about the average charge per liter in the population of stores based on the information we obtain from our sample of 500 stores. Which area of statistics do we use?
  - (a) Descriptive statistics
  - (b) Inferential statistics
  - (c) Neither descriptive nor inferential statistics
  - (d) Cannot be determined from the information given

5. A corporation owns a jet airplane. When the president of the corporation wanted to know how many times during the past year the plane had been used by each department, he was provided with the following information:

Department:	A	B	C	D	E
Number of times the plane was used:	36	20	15	30	5

Which area of statistics do we use?

- (a) Descriptive statistics      (c) Neither descriptive nor inferential statistics  
(b) Inferential statistics      (d) Cannot be determined from the information given
6. Indicate which of the following are *qualitative* and which are *quantitative* variables:
- (a) The religion of a person.  
(b) The color of a boat.  
(c) The speed of a plane.  
(d) The temperature of a room.  
(e) The amount of money deposited in a bank.
7. Shell Company wants to determine the number of its service stations that stay open 24 hours a day in the USA.
- (a) What is the population?  
(b) Are the data collected qualitative or quantitative?
8. Students enrolled at NYU requested that the college begin a full 4-year program leading to a university degree. Reporters from the NY Times and the Washington Post asked a group of students during lunchtime in the cafeteria whether they thought the college would agree.
- (a) What was the population in this survey?  
(b) Would the answers to the newspaper questions be from a sample or the population?  
(c) Would the results represent the opinions of all students at NYU.?  
(d) Would the results of this survey consist of quantitative or qualitative information?

9. Identify if the following observations are from *discrete* or *continuous* variables?
- (a) In a batch of 2000 radios, 14 were found to be defective.
  - (b) Last week 6 students were absent from their Math 100 class.
  - (c) A light truck weighs 2 tons.
  - (d) On the last Math 100 test, there were 2 perfect scores.
  - (e) A radar on I95 highway spotted Mr. Smith driving at 160 km/h.
  - (f) Adam spends an average of  $2\frac{1}{2}$  hours studying every day.
  - (g) 254 students voted for Adam as the president of the student council.
  - (h) Mary lost 4.8 kg on her latest diet.