MATH533 WEEK 1 HOMEWORK

Suppose you are an operations manager for a plant that manufactures batteries. Give an example of how you could use *descriptive* statistics to make better managerial decisions. Give an example of how you could use *inferential* statistics to make better managerial decisions.

Say whether this or that example describes the use of *descriptive* or *inferential* statistics.

1.	Take a sample of batteries and test them to determine the average shelf life - use the sample average to reach conclusions about all batteries of this type. Management can then make labeling and advertising claims. They can compare these figures to the shelf-life of competing batteries. – ANS INFERENTIAL
2.	Total number of worker hours per plant per week - help management understand labor costs, work allocation, productivity, etc. – ANS DESCRIPTIVE
3.	Interview a random sample of production workers to determine attitude towards company management - management can use this survey result to ascertain employee morale and to direct efforts towards creating a more positive working environment which, hopefully, results in greater productivity. – ANS INFERENTIAL
4.	Company sales volume of batteries in a year - help management decide if the product is profitable, how much to advertise in the coming year, compare to costs to determine profitability. - ANS DESCRIPTIVE
5.	Total amount of sulfuric acid purchased per month for use in battery production - can be used by management to study wasted inventory, scrap, etc. - ANS DESCRIPTIVE
6.	Take a sample of battery consumers and determine how many batteries they purchase per year. Infer to the entire population - management can use this information to estimate market potential and penetration. – ANS INFERENTIAL

Classify each of the following as nominal, ordinal, interval, or ratio data.

a. The time required to produce each tire on an assembly line - RATIO

b. The number of quarts of milk a family drinks in a month - RATIO

c. The ranking of four machines in your plant after they have been designated as excellent, good, satisfactory, and poor - ORDINAL

d. The telephone area code of clients in the United States - NOMINAL

e. The age of each of your employees - RATIO

f. The dollar sales at the local pizza shop each month - RATIO

g. An employee's identification number - NOMINAL

h. The response time of an emergency unit - RATIO

For the following data, construct a frequency distribution with six

classes. 57 23 35 18 21