

## Econ 311: Problem Set 1

**Due: Monday, September 15, 2008**

**Question.1** Your college surveyed its students to determine average weekly time spent surfing the Internet. From a random sample of 174 students the average time was computed to be 6.1 hours.

- What is the population?
- What is the sample?
- What is the statistic?
- Is the value 6.1 hours a parameter or a statistic?

**Question.2** Determine if descriptive statistics or inferential statistics should be used to obtain the following information:

- A graph that shows the number of defective bottles produced during the day shift over one week's time.
- An estimate of the percentage of employees who arrive to work late.
- An indication of the relationship between years of employee experience and pay scale.

**Question.3** A sample of 20 financial analysts was asked to provide forecasts of earning per share of a corporation for next year. The results are summarize in the following table:

Forecast	9.95	10.45	10.95	11.45	11.95
(\$ per share)	<10.45	<10.95	<11.45	<11.95	12.45
# of Analysts	2	8	6	3	1

- Draw the histogram.
- Find the relative frequencies.
- Find the cumulative frequencies.
- Find and interpret the relative cumulative frequencies.

**Question 4.** A team of undergraduate business students was asked to recommend and improvement to the data entry process at the country appraiser's office. The team identified several types of errors, such as posting an incorrect name or entering an incorrect parcel number. The deed abstractors were asked to keep a record of the errors in data entry that were sent to them. The following table is a frequency distribution of errors:

Defect	Total
Posting error in name	23
Posting error in parcel	21
Property sold after tax bills were mailed	5
Inappropriate call transfer(not part of deeds/mapping)	18
Posting error in legal description/ incomplete legal description	4
Deeds received after tax bills printed	6
Correspondences errors	2
Miscellaneous errors	1

- Construct a Pareto diagram of these defects in data entry.
- What recommendations would you suggest to the country appraiser?

**Question 5.** A consumer goods company has been studying the effect of advertising on total profits. As part of this study, data on advertising expenditures (1000s) and total sales (1000s) were collected for a five-month period and are as follows:

(10,100) (15,200) (7,80) (12, 120) (14,150)

The first number is advertising expenditures and the second is total sales. Plot the data.