1. On a study on body temperatures, 106 temperatures were taken. Suppose that we only have the first 10 temperatures to work with. The mean and standard deviation of these 10 scores were 98.44° F and 0.30°F, respectively. Construct a 95% confidence interval for the mean of all body temperatures.

2. In a time use study 20 randomly selected managers were found to spend a mean time of 2.4 hours per day on paperwork. The standard deviation of the 20 scores was 1.30 hours. Construct a 98% confidence interval for the mean time spent on paperwork by all managers.

3. A random sample of 19 women results in a mean height of 63.85 inches. Other studies have shown that womens heights are normally distributed with a standard deviation of 2.5 inches. Construct a 90% confidence interval for the mean height of all women.

4. The NSSO surveyed 4400 college pass outs about the lengths of time required to earn their bachelors degrees. The mean was 5.15 years and the standard deviation was 1.68 years. Based on the above information, construct a 98% confidence interval for the mean time required to earn a bachelors degree by all college students.

5. In 1000 tosses of a coin, 560 heads appear. Is it reasomable to assume that the coin is fair ?

6. An exit poll by a Real news station of 900 people in the state of timbaktu found 440 voting for Suppandi and 460 voting for Meera. Does the data support the hypothesis that Suppandi received $p = 50\%$ of the states vote?

7. Suppose a motorcycle manufacturer claims a model gets 25 km per litre. A consumer group asks 10 owners of this model to calculate their kmpl and the mean value was 22 with a standard deviation of 1.5. Is the manufacturers claim supported?

8. It is claimed that a new treatment is more effective than the standard treatment for prolonging the lives of terminal cancer patients. The standard treatment has been in use for a long time, and from records in medical journals the mean survival period has been 4.2 years with a standard deviation of 1.1 years. The

new treatment is administered to 80 patients, and their average duration of survival is calculated to be 4.5 years. Is the claim supported by these results?

9. From extensive records, it is known that the duration of treating a disease by a standard therapy has a mean of 15 days with a standard deviation of 3 days. It is claimed that a new therapy can reduce the treatment time. To test this claim, the new therapy is tried on 70 patients, and their average treatment time is calculated to be 14.6 days. Is the claim supported by these results? 3.

10. "Biological Oxygen Demand" (BOD) is an index of pollution (in pounds/day) that is monitored in the treated effluent of paper mills on a regular basis. Historically, a company has targeted an average BOD of 3000 kgms/day (with a standard deviation of 757). From 43 determinations of BOD at the company's paper mill during the spring and summer months of 1992, the average was found to be 3246 kgms/day. Do the sample data indicate that the actual amount of BOD is significantly off the company's target ?