Section 10.1

Names:

1. The Graduate Record Examination (GRE) is a test required for admission to many U.S. graduate schools. Students’ scores on the quantitative portion of the GRE follow a normal distribution with mean 150 and standard deviation 8.8. (Source: http://www.ets.org/) An admissions officer at a large graduate school believes the mean is less than 150.
   a. Determine the null and alternative hypotheses.

b. State the conclusion if the null hypothesis is rejected.

c. State the conclusion if we do not reject the null hypothesis.

d. Explain what it would mean to make a Type I error.

e. Explain what it would mean to make a Type II error.
2. Many health care workers believe the mean body temperature of healthy adults is 98.6 degrees Fahrenheit. Philip A. Mackowiak, a doctor at the University of Maryland Center for Vaccine Development, suspects this number might be incorrect. (Source: Mackowiak, PA, Wasserman, SS, and Levine, MM (1992) A Critical Appraisal of 98.6 Degrees F, the Upper Limit of the Normal Body Temperature, and Other Legacies of Carl Reinhold August Wunderlich. Journal of the American Medical Association (268) pp. 1578-1580.)

a. Determine the null and alternative hypotheses.

b. Sample data indicated that the null hypothesis should be rejected. State the conclusion of the researcher

c. Suppose the mean body temperature of healthy adults is actually 98.6 degrees Fahrenheit. Was a Type I or Type II error committed?