Stat 135, Fall 2006 A. Adhikari HOMEWORK 6 (due Friday 10/13)

1. 9.3. Do b accurately using R. Say what the limiting power is as p approaches 0.5; also say what the limiting power is as p approaches 0 and 1.

2. 9.11. Again, use R to do the plots. In each case, say what the limiting power is as μ approaches 0.

3. 9.12.

4. 9.13. In **c**, use R to find the critical values x_0 and x_1 .

5. 9.20.

6. 9.24. In \mathbf{e} , also use R to find the exact significance level.

7. 11.1. Turn the page for d-h.

8. 11.16. You should be able to solve an inequality for n, but if you can't, don't forget other less elegant methods!

9. This question is from *Statistics* by Freedman, Pisani, and Purves, the text used in our lower division classes. Five planets were known to the ancient world: the *inner planets* Mercury and Venus, and the *outer planets* Mars, Jupiter, and Saturn. The densities of the planets are given below, relative to the density of the Earth which is taken as 1. The inner planets have an average density of 0.81, while the outer planets have an average density of 0.36. Does it make sense to ask if the difference is statistically significant? If so, can the question be answered with the information given? If so, answer it.

Mercury Venus Mars Jupiter Saturn 0.68 0.94 0.71 0.24 0.12

10. A survey was conducted to study how college freshmen viewed laws and the justice system. As part of the survey, the students were asked to agree or disagree with each statement in a list. Here are data on two of the statements.

Statement A: The death penalty should be abolished.

Statement B: There is too much concern in the courts for the rights of criminals.

You can assume that the results come from all Berkeley freshmen in 2004, and from independent simple random samples of size 1000 each, taken from among all freshmen in the nation, once in 1990 and again in 2004.

	agree with Statement A	disagree with Statement B
2004 Berkeley freshmen	51%	55%
2004 freshmen in nation	33%	61%
1990 freshmen in nation	22%	unknown

In each of parts **a-d**, please do the following, giving clear reasons or calculations for each answer: Say whether it makes sense to ask if the difference between the percents is statistically significant; if so, say whether that question can be answered with the information given; if so, answer it!

a. 55%, 61%. This compares Berkeley freshmen and freshmen in the nation in 2004, with respect to responses to Statement B.

b. 51%, 55%. This compares Berkeley freshmen's responses to Statements A and B in 2004.

c. 33%, 61%. This compares the responses of freshmen in the nation to Statements A and B in 2004.

d. 22%, 33%. This compares freshman opinions on abolishing the death penalty, in 1990 and 2004.