Statistics 36-303, Spring 2003
Assignment 4 (Revised)

Due in class: Thursday, February 13.

Note: The first mid-semester examination will be on Thursday February 20, in class. This will be a closed-book examination covering both technical statistical materials and survey design materials. You will be allowed to bring in one 2-sided page of notes.

I. A newspaper poll reports that in an RDD telephone poll with a sample of 625 adults, 45% support the President’s initiative on reforming Social Security, up from 39% in a similar poll with a sample of size 900 last fall. The headline reads: “Support for the President on SS rises sharply.”

(a) The newspaper reports that the margin of error for this poll is 4%. Explain precisely where this value comes from, what it means, and the relevance of it to the conclusions in the headline.

(b) Construct an approximate 95% confidence interval for the change in support for the president’s initiative, and explain in words what it means.

(c) Does the 95% confidence interval contain zero? How does this related to the headline on the report?

II. The Detroit Area Study is an important periodic survey carried out by sociology faculty and graduate students from the University of Michigan which involved personal interviewing of area adults. The 1958 study focused on issues regarding the influence of religion on everyday life and is described in the book: Gerhard Lenski (1961) The Religious Factor, Doubleday, New York. The author explains that the sample “was basically a simple random sample of the population of the metropolitan area.” There were 656 respondents, 267 of whom identified themselves as white Protestants and 230 as white Catholics. In response to a question that asked whether the government was doing enough in the areas of housing, unemployment, and education, 161 of the white Protestants and 136 of the white Catholics said “No.” Is there statistical evidence that these two subgroups differ in their views on this issue?

III. The Pittsburgh Post Gazette runs a cyberpoll at http://www.post-gazette.com/yourbiz/. The question posted this week was the following: “Cell phones distract drivers even if they use hands-free devices, according to researchers at the University of Utah. Do you believe your phone distracts you on the road?”

- No.
- Yes, but can’t live without it.
- Perhaps.
- Only when I’m eating/drinking/smoking at once and steering with my knee.”

Webpage readers are invited to check the box with their answer. As of Wednesday evening there were 81 votes. Discuss (a) the validity of this type of poll as a sample survey and (b) the strengths and weaknesses of the specific question this week.