Extra Credit
Due 03/27/2007
Worth 50 pts

For this assignment you will need to look up some data from the General Social Survey. Go to `http://sda.berkeley.edu/GSS` and click on "New SDA 3.0 interface". Use this website to answer the following.

1. We would like to determine the proportion of Americans that definitely believe in heaven and/or hell. To access the data set, type HELL in the box labeled "Row" and click the button "Run the Table". Then do the same for the variable HEAVEN.

   (a) What is the sample size in each case?

   (b) Calculate proportion of people answering "Yes, Definitely" to each question.

   (c) Find a 95% confidence interval for the sample proportion $\hat{p}$ for each question.

   (d) What assumptions are you making about the distribution of $\hat{p}$ in order to construct the confidence intervals?

   (e) Do more people believe in heaven or hell? Justify your answer.

2. The GSS also has responses to the question "On how many days in the past 7 days have you felt lonely?". (The data for this question can be found by typing LONELY into Berkeley's GSS page as in the previous question.)

   (a) What is the sample size?

   (b) Report the percentage making each response and the mean and standard deviation of the number of 'lonely' days.

   (c) Find 95% and 99% confidence intervals for the sample mean $\bar{x}$ and interpret them.

   (d) What assumptions are made in order to construct these intervals?