

STATISTICS

FIRST WRITTEN ASSIGNMENT - B

The following survey design has been proposed to explore the role of religion in the lives of the faculty and staff at Harvard Law School. Using the Harvard Law School e-mail directory, a sample of 100 faculty and staff will be selected and e-mailed the following:

1. How religious are you?

Not at all ____ Moderately ____ Very ____ Extremely ____

2. How often do you attend religious services outside your home?

Number of times per month ____

3. What was your last year's income?

\$ ____

4. How much did you contribute last year to organized religion?

\$ ____

5. If Harvard Law School employed a non-denominational chaplain, how likely is it that you would use his or her services?

Unlikely ____ Possibly ____ Very Likely ____

6. Do you believe that fundamentalist religious education (such as that which has resulted in suicide bombings) is acceptable in American society?

Yes ____ No ____

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1. Evaluate the survey. Which questions are likely to elicit honest and useful answers? Can you suggest improvements? What shapes do you expect for the distribution of responses to questions 2 and 3?
 2. The following question is in a survey – what is the last digit of your telephone number? What would the histogram of responses look like?

- Using the data on Page 16 in the text, compute the mean and standard deviation for the sample of Small Cap Stocks. If the distribution of return is Normal, what percent of stocks would you expect had returns of 20 percent or more in the population of Small Cap Stocks.

Special Challenge Question:

The distribution of speeds on a particular stretch of the Mass Pike during non-rush hours is approximately normal, with a mean of 68 MPH (the speed limit is 65 MPH) and a standard deviation of 10 MPH. The police only have the resources to stop and ticket the 2 percent of drivers who are going the fastest. What is the lowest speed for which they should ticket?