1. A phone-in poll conducted by a newspaper reported that 73% of those who called in liked business tycoon Donald Trump. The unknown true percentage of American citizens who like Donald Trump is a

(a) Statistic

(b) Sample

(c) Parameter

(d) Population

(e) None of the above. The answer is .

2. The sampling distribution of a statistic is

(a) The probability that we obtain the statistic in repeated random samples

(b) The mechanism that determines whether randomization was effective

(c) The distribution of values taken by a statistic in all possible samples of the same sample size from the same population

(d) The extent to which the sample results differ systematically from the truth

(e) None of the above. The answer is .

3. A statistic is said to be *unbiased* if

(a) The survey used to obtain the statistic was designed so as to avoid even the hint of racial or sexual prejudice

(b) The mean of its sampling distribution is equal to the true value of the parameter being estimated

(c) Both the person who calculated the statistic and the subjects whose responses make up the statistic were truthful

(d) It is used for honest purposes only

(e) None of the above. The answer is .

4. The number of undergraduates at Johns Hopkins University is approximately 2000, while the number at Ohio State University is approximately 40,000. At both schools a simple random sample of about 3% of the undergraduates is taken. Which of the following is the best conclusion?

(a) The sample from Johns Hopkins has less sampling variability than that from Ohio State.

(b) The sample from Johns Hopkins has more sampling variability than that from Ohio State.

(c) The sample from Johns Hopkins has almost the same sampling variability as that from Ohio State.

(d) It is impossible to make any statement about the sampling variability of the two samples since the students surveyed were different.

(e) None of the above. The answer is .

5. The law of large numbers states that, as the number of observations drawn at random from a population with finite mean  increases, the mean  of the observed values

1. Gets larger and larger.
2. Gets smaller and smaller.
3. Gets closer and closer to the population mean .
4. Fluctuates steadily between one standard deviation above and one standard deviation below the mean.
5. Varies randomly about .

**6.** Following a dramatic drop of 500 points in the Dow Jones Industrial Average in September 1998, a poll conducted for the Associated Press found that 92% of those polled said that a year from now their family financial situation will be as good as it is today or better. The number 92% is a

(a) Statistic

(b) Sample

(c) Parameter

(d) Population

(e) None of the above. The answer is .

**7.** In a large population, 46% of the households own VCR’s. A simple random sample of 100 households is to be contacted and the sample proportion computed. The mean of the sampling distribution of the sample proportion is

(a) 46

(b) 0.46

(c) About 0.46, but not exactly 0.46

(d) 0.00248

(e) The answer cannot be computed from the information given

**8.** If a population has a standard deviation , then the standard deviation of the mean of 100 randomly selected items from this population is

(a) 

(b) 100 

(c) /10

(d) /100

(e) 0.1

**9.** The distribution of values taken by a statistic in all possible samples of the same size from the same population is

(a) The probability that the statistic is obtained

(b) The population parameter

(c) The variance of the values

(d) The sampling distribution of the statistic

(e) None of the above. The answer is .

**10.** If a statistic used to estimate a parameter is such that the mean of its sampling distribution is equal

to the true value of the parameter being estimated, the statistic is said to be

(a) Random

(b) Biased

(c) A proportion

(d) Unbiased

(e) None of the above. The answer is .

**11.** A simple random sample of 1000 Americans found that 61% were satisfied with the service provided by the dealer from which they bought their car. A simple random sample of 1000 Canadians found that 58% were satisfied with the service provided by the dealer from which they bought their car. The sampling variability associated with these statistics is

1. Exactly the same.
2. Smaller for the sample of Canadians because the population of Canada is smaller than that of the United States, hence the sample is a larger proportion of the population.
3. Smaller for the sample of Canadians because the percentage satisfied was smaller than that for the Americans.
4. Larger for the Canadians because Canadian citizens are more widely dispersed throughout the country than in the United States, hence they have more variable views.
5. About the same. – Americans .04877 and Canadians .04936