EXPERIMENTAL DESIGN 1

Each of the 30 major league baseball teams carries a 40-person roster. A sample of 60 players (5 percent of all 1,200 players) is to be randomly selected to undergo drug tests. To do this, each team is instructed to put their 40 names in a hat and randomly draw two names. Will this method result in a simple random sample of the 1,200 baseball players?

(A) Yes, because each player has the same chance of being selected.

(B) Yes, because each team is equally represented.

(C) Yes, because this is an example of stratified sampling, which is a special case of simple random sampling.

(D) No, because the teams are not chosen randomly.

(E) No, because not each group of 60 players has the same chance of being selected.

EXPERIMENTAL DESIGN 3

A company wishes to survey what people think about a new product it plans to market. They decide to randomly sample from their customer database as this includes phone numbers and addresses. This procedure is an example of which type of sampling?

(A) Cluster (B) Convenience (C) Simple random

(D) Stratified (E) Systematic

EXPERIMENTAL DESIGN 9

A sales representative wishes to survey her client base of 47 companies. She has 47 business cards, all of the identical size, from her contacts in the companies, and decides to drop them all in a small box, shake them up, and reach in to pick 5 cards for her sample. This procedure is an example of which type of sampling?

(A) Cluster (B) Convenience (C) Simple random

(D) Stratified (E) Systematic

EXPERIMENTAL DESIGN 10

A newspaper advice columnist asks her readers if they would have married their current spouse if they had it to do over again. Of the 25,000 or so responses, 80 percent said no. What does this show?

(A) The survey is meaningless because of voluntary response bias.

(B) No meaningful conclusion is possible without knowing something more about the characteristics of her readers.

(C) The survey would have been more meaningful if she had picked a random sample of the 25,000 readers who responded.

(D) The survey would have been more meaningful if she had used a control group.

(E) This was a legitimate sample, randomly drawn from her readers, and of sufficient size to allow the conclusion that most of her readers who are married would have second thoughts about marrying their current spouse.

EXPERIMENTAL DESIGN 11

A researcher planning a survey of heads of households in New York has census lists for each of the 62 counties in the state. The procedure will be to obtain a simple random sample of heads of households from each of the counties rather than grouping all the census lists together and obtaining a sample from the entire group. Which of the following is a true statement about the resulting stratified sample?

I. It is more susceptible to bias than would be a simple random sample.
II. It is easier and more cost effective than a simple random sample.
III. It gives comparative information that a simple random sample wouldn't give.

(A) I and II (B) I and III (C) II and III (D) I, II, and III

(E) None of the above gives the complete set of true responses.

EXPERIMENTAL DESIGN 12

Sampling error occurs

(A) When interviewers make mistakes resulting in bias.

(B) When interviewers use judgment instead of random choice in picking the sample.

(C) When samples are too small.

(D) Because a sample statistic is used to estimate a population parameter.

(E) In all of the above cases.

EXPERIMENTAL DESIGN 5

A food judge is given an assignment to choose and sample the food at 52 (out of over 20,000) NYC restaurants. She has an assistant list all restaurants whose name begins with *A*, assigns each a number, and uses a random number generator to pick two of these numbers and thus two restaurants. She proceeds to use the same procedure for each letter of the alphabet and combines the results into a group of 52. Which of the following are true statements?

I. Her procedure makes use of chance.
II. Her procedure results in a simple random sample.
III. Each restaurant in NYC has an equal probability of being selected.

(A) I and II (B) I and III (C) II and III (D) I, II, and III

(E) None of the above gives the complete set of true responses.