

Ch 4 Practice Test

Multiple Choice

Identify the choice that best completes the statement or answers the question.

Scenario 4-1

A sportswriter wants to know how strongly Lafayette residents support the local minor league baseball team, the Lafayette Leopards. She stands outside the stadium before a game and interviews the first 20 people who enter the stadium.

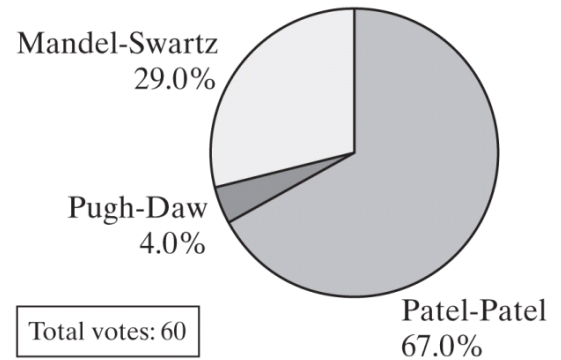
1. Use Scenario 4-1. The intended *population* for this survey is
 - a. all residents of Lafayette.
 - b. all Leopard fans.
 - c. all people attending the game the day the survey was conducted.
 - d. the 20 people who gave the sportswriter their opinion.
 - e. all American adults.
2. Use Scenario 4-1. The *sample* for the survey is
 - a. all residents of Lafayette.
 - b. all Leopard fans.
 - c. all people attending the game the day the survey was conducted.
 - d. the 20 people who gave the sportswriter their opinion.
 - e. the sportswriter.
3. Use Scenario 4-1. The newspaper asks you to comment on their survey of local opinion. You say:
 - a. This is a simple random sample. It gives very accurate results.
 - b. This is a simple random sample. The results are not biased, but the sample is too small to have high precision.
 - c. This is a census, because all fans had a chance to be asked. It gives very accurate results.
 - d. This is a convenience sample. It will almost certainly overestimate the level of support among all Lafayette residents.
 - e. This is a convenience sample. It will almost certainly underestimate the level of support among all Lafayette residents.

Scenario 4-2

You want to know the opinions of American school teachers about establishing a national test for high school graduation. You obtain a list of the members of the National Education Association (the largest teachers' union) and mail a questionnaire to 2500 teachers chosen at random from this list. In all 1347 teachers return the questionnaire.

4. Use Scenario 4-2. The *population* is
 - a. the 1347 teachers who mail back the questionnaire.
 - b. the 2500 teachers to whom you mailed the questionnaire.
 - c. all members of the National Education Association.
 - d. all American school teachers.
 - e. all American school students.
5. Use Scenario 4-2. The *sample* is
 - a. the 1347 teachers who mail back the questionnaire.
 - b. the 2500 teachers to whom you mailed the questionnaire.
 - c. all members of the National Education Association.
 - d. all American school teachers.
 - e. all American school students.
6. A study sponsored by American Express Co. and the French government tourist office found that old stereotypes about French unfriendliness were not true. The respondents were more than 1000 Americans who have visited France more than once for pleasure over the past two years. The results of this study are probably
 - a. very accurate, given the large sample size.
 - b. very inaccurate because the sample is only a small fraction of all Americans who have visited France.
 - c. extremely variable, because people's opinions differ so greatly.
 - d. biased, overstating the extent to which the old stereotypes were not true.
 - e. biased, understating the extent to which the old stereotypes were not true.

7. A candidate for mayor of Dallas wants to know what proportion of city residents support his candidacy. His staff calls 1,000 people chosen at random from the city telephone directory; 850 of them respond. What are the population and the sample in this example?
- Population: all Dallas residents. Sample: the 1,000 people who are called.
 - Population: all Dallas residents. Sample: the 850 people who respond.
 - Population: the telephone directory. Sample: the 850 people who respond.
 - Population: the telephone directory. Sample: the 1,000 people who are called.
 - Population: the 1,000 people who are called. Sample: the 850 people who respond.
8. In order to assess the opinion of students at the University of Minnesota on campus snow removal, a reporter for the student newspaper interviews the first 12 students he meets who are willing to express their opinion. The method of sampling used is
- a census
 - a cluster sample
 - a voluntary response sample
 - a convenience sample
 - a simple random sample
9. A television station is interested in predicting whether voters in its viewing area are in favor of offshore drilling. It asks its viewers to phone in and indicate whether they support/are in favor of or are opposed to this practice. Of the 2241 viewers who phoned in, 1574 (70%) were opposed to offshore drilling. The viewers who phoned in are
- a voluntary response sample.
 - a convenience sample.
 - a probability sample.
 - a population.
 - a simple random sample.
10. A poll conducted by the student newspaper asked, "Who do you believe will win the Ohio State Undergraduate Student Government elections?" In order to vote, one had to access the student newspaper's Web site and record one's vote. The results of the poll were summarized in a graphic similar to the following.



- Which of the following statements is true about these results?
- The results of the survey are unreliable because response to the survey was voluntary.
 - The sample is large enough to eliminate potential sources of bias in the design of the poll.
 - This is not an appropriate way of presenting the results—a bar graph should have been used instead.
 - Patel and Patel have such a large majority that, even though there are flaws in the poll, they are still almost certain to win.
 - There must be an error. These percentages aren't possible.
11. A news release for a diet products company reports: "There's good news for the 65 million Americans currently on a diet." Its study showed that people who lose weight can keep it off. The sample was twenty graduates of the company's program who endorse it in commercials. The results of the study are probably
- biased, overstating the effectiveness of the diet.
 - biased, understating the effectiveness of the diet.
 - unbiased because these are nationally recognized individuals.
 - unbiased, but they could be more accurate. A larger sample size should be used.
 - biased, but it is hard to tell whether the results will overstate or understate the effects of the diet.
12. A simple random sample of size n is defined to be
- a sample of size n chosen in such a way that every unit in the population has the same chance of being selected.
 - a sample of size n chosen in such a way that

- every unit in the population has a known nonzero chance of being selected.
- a sample of size n chosen in such a way that every set of n units in the population has an equal chance to be the sample actually selected.
 - a sample of size n chosen in such a way that each selection is made independent of every other selection.
 - all of the above. They are essentially identical definitions.
13. A marketing research firm wishes to determine if the adult men in Laramie, Wyoming, would be interested in a new upscale men's clothing store. From a list of all residential addresses in Laramie, the firm selects a simple random sample of 100 and mails a brief questionnaire to each. The chance that all 100 homes in a particular neighborhood in Laramie end up being the sample of residential addresses selected is
- the same as for any other set of 100 residential addresses.
 - exactly 0. Simple random samples will spread out the addresses selected.
 - reasonably large due to the "cluster" effect.
 - 100 divided by the size of the population of Laramie.
 - large since the population of Laramie is small.
14. A *simple random sample* is
- any sample selected by using chance.
 - any sample that gives every individual the same chance to be selected.
 - a sample that gives every possible sample of the same size the same chance to be selected.
 - a sample that selects equal numbers of individuals from each stratum.
 - a sample that contains the same percent of each subgroup in the population.
15. In an experiment, an observed effect so large that it would rarely occur by chance is called
- an outlier.
 - influential.
 - statistically significant.
 - bias.
 - replication.

Scenario 4-3

We wish to choose a simple random sample of size three from the following employees of a small company. To do this, we will use the numerical labels attached to the names below.

- | | | |
|--------------|------------|-----------|
| 1. Bechhofer | 4. Kesten | 7. Taylor |
| 2. Brown | 5. Kiefer | 8. Wald |
| 3. Ito | 6. Spitzer | 9. Weiss |

We will also use the following list of random digits, reading the list from left to right, starting at the beginning of the list.

11793 20495 05907 11384 44982 20751 27498 12009 45287 71753 98236 66419 84533

16. Use Scenario 4-3. The simple random sample is
- 117.
 - Bechhofer, Bechhofer again, and Taylor.
 - Bechhofer, Taylor, Weiss.
 - Kesten, Kiefer, Taylor.
 - Taylor, Weiss, Ito.
 - If we use another list of random digits to select the sample, we would get, at most, one name in common with that obtained with the list actually used.
 - If we use another list of random digits to select the sample, the result obtained with the list actually used would be just as likely to be selected as any other set of three names.
 - If we use another list of random digits to select the sample, the result obtained with the list actually used would be far less likely to be selected than any other set of three names.
17. Use Scenario 4-3. Which of the following statements is true?
- If we use another list of random digits to select the sample, we would get the same result as that obtained with the list actually used.
 - If we use another list of random digits to select the sample, we would get a completely different sample than that obtained with the list

18. Which of these statements about the table of random digits is true?
- Every row must have exactly the same number of 0's and 1's.
 - In the entire table, there are exactly the same number of 0's and 1's.
 - If you look at 100 consecutive pairs of digits anywhere in the table, exactly 1 pair is 00.
 - All of these are true.
 - None of these is true.

19. The eight students listed below are enrolled in a new honors course developed by the chemistry department.

- | | |
|------------|-------------|
| 1. Alvarez | 5. Miller |
| 2. Barlow | 6. Pfouts |
| 3. Nahhas | 7. Berliner |
| 4. Salter | 8. Verducci |

Starting at the beginning of the random number list below, choose a simple random sample of four students to be interviewed in detail about the quality of the course. Use the labels attached to the eight names.

41842 81868 71035 09001 43367
49497 54580 81507

The sample you obtain is

- 4, 1, 8, and 4.
- Alvarez, Barlow, Nahhas, and Salter.
- Alvarez, Barlow, Salter, and Verducci.
- Salter, Alvarez, Verduci, Salter.
- Salter, Alvarez, Verduci, Pfouts.

Scenario 4-4

You want to take an SRS of 50 of the 816 students who live in a dormitory on campus. You label the students 001 to 816 in alphabetical order. In the table of random digits you read the entries

95592 94007 69769 33547 72450
16632 81194 14873

20. Use Scenario 4-4. The first three students in your sample have labels
- 955, 929, 400.
 - 400, 769, 769.
 - 559, 294, 007.
 - 929, 400, 769.
 - 400, 769, 335.

21. Use Scenario 4-4. Another correct choice of labels for the 816 students is
- 000 to 816 in alphabetical order.
 - still 001 to 816, but in order of the students' ID numbers.
 - 000 to 815 in alphabetical order.
 - Both (B) and (C) are correct.
 - All of (A), (B), and (C) are correct.
22. A public opinion poll in Ohio wants to determine whether or not registered voters in the state approve of a measure to ban smoking in all public areas. They select a simple random sample of fifty registered voters from each county in the state and ask whether they approve or disapprove of the measure. This is an example of a
- systematic random sample.
 - stratified random sample.
 - multistage sample.
 - simple random sample.
 - cluster sample.
23. A stratified random sample is appropriate when
- It is impractical to take a simple random sample because the population is too large.
 - The population can be easily subdivided into groups according to some categorical variable, and the variable you are measuring is quite different within the groups but very similar between groups.
 - The population can be easily subdivided into groups according to some categorical variable, and the variable you are measuring is very similar within the groups but quite different between groups.
 - You intend to take a sample of more than 100 individuals.
 - You want to avoid undercoverage of certain groups.
24. A stratified random sample addresses the same issues as which of the following experimental designs?
- A block design.
 - A double-blind experiment.
 - An experiment with a placebo.
 - A completely randomized design.
 - A confounded, nonrandomized study.

25. We divide the class into two groups: first year students and others. We then take random samples from each group. This is an example of
- simple random sampling
 - cluster sampling
 - multistage sampling
 - stratified random sampling
 - systematic random sampling
26. To determine the proportion of each color of Peanut Butter M&M, you buy 10 1.69 ounce packages and count how many there are of each color. This is an example of
- simple random sampling
 - cluster sampling
 - multistage sampling
 - stratified random sampling
 - systematic random sampling
27. In order to select a sample of undergraduate students in the United States, I select a simple random sample of four states. From each of these states, I select a simple random sample of two colleges or universities. Finally, from each of these eight colleges or universities, I select a simple random sample of 20 undergraduates. My final sample consists of 160 undergraduates. This is an example of
- simple random sampling.
 - stratified random sampling.
 - multistage sampling.
 - convenience sampling.
 - cluster sampling.
28. An opinion research firm wants to find the country's reaction to a speech by a famous politician. They randomly select six states, then randomly select ten Zip Codes from each state. Fifty people from each Zip Code are randomly selected for the survey. This is an example of
- convenience sampling.
 - cluster sampling.
 - stratified random sampling.
 - simple random sampling.
 - multistage sampling.
29. You plan to give a math achievement test to samples of 15 year-olds from both the U.S. and Korea in order to compare mathematics knowledge in the two countries. In each country, you will randomly choose
- 300 students from low-income families
400 students from middle-income families
200 students from high-income families
The sample from Korea is a
- multistage sample.
 - simple random sample.
 - convenience sample.
 - voluntary response sample.
 - stratified random sample.
30. A marine biologist wants to estimate the mean size of the barnacle *Semibalanus balanoides* on a stretch of rocky shoreline. To do so, he randomly selected twenty 10-cm. square plots and measured the size of every barnacle in each plot. This is an example of
- convenience sampling.
 - cluster sampling.
 - stratified random sampling.
 - simple random sampling.
 - multistage sampling.
31. A 1992 Roper poll found that 22% of Americans say that the Holocaust may not have happened. The actual question asked in the poll was "*Does it seem possible or impossible to you that the Nazi extermination of the Jews never happened?*" and 22% responded possible. The results of this poll cannot be trusted because
- undercoverage is present. Obviously, those people who did not survive the Holocaust could not be in the poll.
 - the question is worded in a confusing manner.
 - we do not know who conducted the poll or who paid for the results.
 - nonresponse is present. Many people will refuse to participate, and those who do will be biased in their opinions.
 - the question is clearly biased in the direction of a "possible" answer.
32. In the late 1990's Scotland was considering independence from England. An opinion poll showed that 51% of Scots favored "independence." Another poll taken at the same time showed that only 34% favored being "separate" from England. The reason these results differ by so much is that
- samples will usually differ just by chance due to random sampling.
 - the wording of questions has a big effect on poll results.
 - more follow-up efforts reduced the nonresponse rate of the second poll.

- d. the sample sizes are different, so the margins of error are different.
- e. the second poll suffered from undercoverage.
33. A local tax reform group polls the residents of the school district and asks the question, “Do you think the school board should stop spending taxpayers’ money on non-essential arts programs in elementary schools?” The results of this poll are likely to
- Underestimate support for arts programs because of undercoverage.
 - Underestimate support for arts programs because of the way the question is worded.
 - Overestimate support for arts programs because of undercoverage.
 - Overestimate support for arts programs because of the way the question is worded.
 - Accurately estimate support for arts programs.
34. Frequently, telephone poll-takers call near dinner time—between 6 pm and 7 pm—because most people are at home then. This is an effort to avoid
- voluntary response bias.
 - calling people after they have gone to bed.
 - a convenience sample.
 - nonresponse.
 - response bias.
35. The **Bradley effect** is a theory proposed to explain observed discrepancies between voter opinion polls and election outcomes in some elections where a white candidate and a non-white candidate run against each other. The theory proposes that some voters tend to tell pollsters that they are undecided or likely to vote for a non-white candidate, and yet, on election day, vote for the white opponent. This is an example of
- voluntary response bias.
 - bias resulting from question wording.
 - undercoverage.
 - nonresponse.
 - response bias.
36. Just before the presidential election of 1936, the magazine *Literary Digest* predicted—incorrectly, as it turned out—that Alf Landon would defeat Franklin Delano Roosevelt. Landon lost in a landslide. It turned out that the magazine had only polled its own subscribers, plus others from a list of automobile owners and a list of people who had telephone service. All three groups had higher than typical incomes during the Great Depression. This is an example of
- voluntary response bias.
 - bias resulting from question wording.
 - undercoverage.
 - nonresponse.
 - response bias.
37. Which of the following is not a major principle of good design for all experiments?
- Comparison to a control.
 - Replication
 - Blocking
 - Randomization
 - All of these are important principles for every experiment.
38. The essential difference between an experiment and an observational study is that
- observational studies may have confounded variables, but experiments never do.
 - in an experiment, people must give their informed consent before being allowed to participate.
 - observational studies are always biased.
 - observational studies cannot have response variables.
 - an experiment imposes treatments on the subjects, but an observational study does not.

Scenario 4-5

In order to assess the effects of exercise on reducing cholesterol, a researcher took a random sample of fifty people from a local gym who exercised regularly and another random sample of fifty people from the surrounding community who did not exercise regularly. They all reported to a clinic to have their cholesterol measured. The subjects were unaware of the purpose of the study, and the technician measuring the cholesterol was not aware of whether or not subjects exercised regularly.

39. Use Scenario 4-5. This is a(n)
- observational study.
 - experiment, but not a double blind experiment.
 - double blind experiment.
 - matched pairs experiment.
 - block design.
40. A market research company wishes to find out whether the population of students at a university prefers brand A or brand B of instant coffee. A random sample of students is selected, and each one is asked to try brand A first and then brand B (or vice versa, with the order determined at random). They then indicate which brand they prefer. The response variable is
- whether brand A or B is tried first.
 - which brand they prefer.
 - coffee.
 - the identity of the student.
 - none of these.
41. The most important advantage of experiments over observational studies is that
- experiments are usually easier to carry out.
 - experiments can give better evidence of causation.
 - confounding cannot happen in experiments.
 - an observational study cannot have a response variable.
 - observational studies cannot use random samples.
43. Use Scenario 4-6. The response variable in this study is
- two cups of coffee.
 - the time the class is held.
 - class attendance.
 - teacher's performance.
 - exam performance.
44. Use Scenario 4-6. Instead of giving all students in the 8:30 section two cups of coffee, students in the 8:30 section are randomly assigned to a treatment group (two cups of coffee) or a control group (two cups of decaffeinated coffee). The coffee is so bad that students cannot tell whether they are in the treatment or the control group. As it turns out, students in both groups do better on the exam than students in the 9:30 section, who weren't given anything. This could be the result of
- the placebo effect.
 - an observational study.
 - voluntary response.
 - sampling variability.
 - all of the above.
45. Use Scenario 4-6. Suppose half of the 8:30 students are randomly allocated to the treatment group (two cups of coffee), the other half to the control group (two cups of decaf). In addition, half of the 9:30 students are randomly allocated to the treatment group, the other half to the control group. This is an example of a
- voluntary response study.
 - stratified sampling procedure.
 - matched pairs design.
 - completely randomized design.
 - randomized block design.

Scenario 4-6

Does caffeine improve exam performance? Suppose all students in the 8:30 section of a course are given a "treatment" (two cups of coffee) and all students in the 9:30 section are not permitted to have any caffeine before a mid-term exam.

42. Use Scenario 4-6. Unfortunately, any systematic difference between the two sections on the exam might be due to the fact that the 8:30 and 9:30 classes have different instructors. This is an example of
- placebo effect.
 - bias.
 - confounding.
 - observational study.
 - stratification.

Scenario 4-7

A farmer wishes to determine which of two brands of baby pig pellets, Kent or Moormans, produces better weight gains. Two of his sows each give birth to litters of 10 pigs on the same day, so he decides to give the baby pigs in litter A only Kent pellets, while the pigs in litter B will get only Moormans pellets. After four weeks, the average weight gain for pigs in litter A is greater than the average weight gain for pigs in litter B.

46. Use Scenario 4-7. The farmer has conducted a(n)
- stratified random sample.

- b. matched pairs design.
 - c. observational study.
 - d. experiment, but not a completely randomized experiment.
 - e. completely randomized experiment.
47. Use Scenario 4-7. The brand of pellets is
- a. a parameter.
 - b. the response variable.
 - c. the explanatory variable.
 - d. the placebo effect.
 - e. a dependent variable.
48. Use Scenario 4-7. The feed they get is not the only factor affecting the rate at which pigs gain weight. Genetic differences also affect weight gain. It is likely that the pigs in litter A are genetically different from the pigs in litter B, since the two litters have different mothers. Since the farmer is only interested in determining which brand of pellets is better, the study suffers from
- a. confounding.
 - b. common response.
 - c. convenience sampling.
 - d. invalid measurement.
 - e. experimenter bias.
49. Use Scenario 4-7. If the farmer had fed Kent pellets to an SRS of 5 pigs from litter A and an SRS of 5 pigs from litter B, with the remaining 10 pigs getting Moormans pellets, then he would have been using
- a. a systematic random sample.
 - b. a convenience sample.
 - c. a matched-pairs design.
 - d. a block design.
 - e. a completely randomized design.
50. Use Scenario 4-7. The weight of the pigs after four weeks is
- a. a parameter.
 - b. the response variable.
 - c. the explanatory variable.
 - d. the placebo effect.
 - e. stratified.
51. An experiment was conducted by some students to explore the nature of the relationship between a person's heart rate (measured in beats per minute) and the frequency at which that person stepped up and down on steps of various heights. Three rates of stepping and two different step heights were used. A subject performed the activity (stepping at one of the three stepping rates at one of the two possible heights) for three minutes. Heart rate was then measured at the end of this period. The variables "stepping rate" and "step height" are the
- a. factors.
 - b. levels.
 - c. controls.
 - d. units.
 - e. response variables.

Scenario 4-8

Researchers wish to determine if a new experimental medication will reduce the symptoms of allergy sufferers without the side effect of drowsiness. To investigate this question, the researchers randomly assigned 100 adult volunteers who suffer from allergies to two groups. They gave the new medication to the subjects in one group and an existing medication to the subjects in the other group. Forty-four percent of those in the treatment group and 28% of those in the control group reported a significant reduction in their allergy symptoms without any drowsiness.

52. Use Scenario 4-8. The experimental units are the
- a. researchers.
 - b. 100 adult volunteers.
 - c. all the volunteers who reported a significant reduction in their allergy symptoms without any drowsiness.
 - d. all the volunteers who did not report a significant reduction in their allergy symptoms without any drowsiness.
 - e. pills containing the new experimental medication.

53. Medical researchers are excited about a new cancer treatment that destroys tumors by cutting off their blood supply. To date, the treatment has only been tried on mice, but in mice it has been nearly 100% effective in eradicating tumors and appears to have no side effects. As evidence of the effectiveness of the new treatment in treating cancer in humans, these studies
- display a high degree of statistical significance and so with nearly 100% certainty will work in humans.
 - are convincing, assuming the results have been replicated in a large number of mice.
 - are convincing, assuming that proper randomization and control were used.
 - suffer from lack of realism.
 - suffer from placebo effect.
54. One hundred volunteers who suffer from severe depression are available for a study. Fifty are selected at random and are given a new drug that is thought to be particularly effective in treating severe depression. The other fifty are given an existing drug for treating severe depression. A psychiatrist evaluates the symptoms of all volunteers after four weeks in order to determine if there has been substantial improvement in the severity of the depression. The factor in this study is
- which treatment the volunteers receive.
 - the extent to which the depression was reduced.
 - the use of randomization and the fact that this was a comparative study.
 - the use of a psychiatrist to evaluate the severity of depression.
 - the symptoms observed by the psychiatrist.
55. The owner of a chain of supermarkets notices that there is a positive correlation between the sales of beer and the sales of ice cream over the course of the previous year. During seasons when sales of beer were above average, sales of ice cream also tended to be above average. Likewise, during seasons when sales of beer were below average, sales of ice cream also tended to be below average. Which of the following would be a valid conclusion from these facts?
- Sales records must be in error. There should be no association between beer and ice cream sales.
 - Evidently, for a significant proportion of customers of these supermarkets, drinking beer causes a desire for ice cream or eating ice cream causes a thirst for beer.
 - A scatterplot of monthly ice cream sales versus monthly beer sales would show that a straight line describes the pattern in the plot, but it would have to be a horizontal line.
 - It is likely that sales of both beer and ice cream are confounded with another variable, such as seasonal variation in temperature.
 - There is a clear, negative association between beer sales and ice cream sales.
56. A study of elementary school children, ages 6 to 11, finds a high positive correlation between shoe size x and score y on a test of reading comprehension. The observed correlation is most likely due to
- the effect of another variable, such as age.
 - a mistake, since the correlation must be negative.
 - cause and effect (larger shoe size causes higher reading comprehension).
 - "reverse" cause and effect (higher reading comprehension causes larger shoe size).
 - several outliers in the data set.
57. If changes in a response variable are due to the effects of the explanatory variable as well as the effects of another variable, and we cannot distinguish between these effects, we are said to have
- a cause-and-effect relation between the explanatory and response variable.
 - a placebo effect.
 - confounding.
 - correlation.
 - extrapolated.
58. For one kindergarten class in his district, a researcher determines which children already can read simple words and which children cannot upon entering kindergarten. The children are followed until third grade, at which point they are tested to determine the grade level at which they are reading. Those children who were reading simple words on entering kindergarten are found to be reading at a higher level than those who could not read simple words on entering kindergarten. The researcher
- can conclude that children should be taught to read in preschool, as there are clear benefits to reading early.
 - cannot conclude that being able to read before

entering kindergarten is beneficial, as there may be confounding variables in this study.

- c. needs to have taken a random sample of kindergarten students instead of one class to conclude a cause-and-effect relationship.
 - d. needs to check the reading level of the children's parents.
 - e. needs to retest in sixth grade or no conclusions can be reached.
59. The principle reason for the use of *random assignment* in designing experiments is that it
- a. distinguishes a treatment effect from the effects of confounding variables.
 - b. allows double-blinding.
 - c. reduces sampling variability.
 - d. creates approximately equal groups for comparison.
 - e. eliminates the placebo effect.
60. The principle reason for the use of *controls* in designing experiments is that it
- a. distinguishes a treatment effect from the effects of confounding variables.
 - b. allows double-blinding.
 - c. reduces sampling variability.
 - d. creates approximately equal groups for comparison.
 - e. eliminates the placebo effect.
61. The principle reason for *replication* in designing experiments is that it
- a. distinguishes a treatment effect from the effects of other, possibly confounding variables.
 - b. allows double-blinding.
 - c. reduces sampling variability.
 - d. creates approximately equal groups for comparison.
 - e. eliminates the placebo effect.
62. A double-blind experiment was conducted to evaluate the effectiveness of the Salk polio vaccine. The purpose of keeping the diagnosing physicians ignorant of the treatment status of the experimental subjects was to
- a. eliminate grounds for malpractice suits.
 - b. ensure that subjects were randomly assigned to treatments.
 - c. eliminate a possible source of bias.
 - d. make sure nobody is harmed.
 - e. prevent stratification of the experiment.

Ch 4 Practice Test Answer Section

MULTIPLE CHOICE

- | | | |
|------------|--------|--|
| 1. ANS: A | PTS: 1 | TOP: Identify population |
| 2. ANS: D | PTS: 1 | TOP: Identify sample |
| 3. ANS: D | PTS: 1 | TOP: Convenience sample |
| 4. ANS: D | PTS: 1 | TOP: Identify population |
| 5. ANS: A | PTS: 1 | TOP: Identify sample |
| 6. ANS: D | PTS: 1 | TOP: Bias from undercoverage |
| 7. ANS: B | PTS: 1 | TOP: Sample and population |
| 8. ANS: D | PTS: 1 | TOP: Convenience sample |
| 9. ANS: A | PTS: 1 | TOP: Voluntary response |
| 10. ANS: A | PTS: 1 | TOP: Voluntary response |
| 11. ANS: A | PTS: 1 | TOP: Convenience sample |
| 12. ANS: C | PTS: 1 | TOP: SRS definition |
| 13. ANS: A | PTS: 1 | TOP: SRS definition |
| 14. ANS: C | PTS: 1 | TOP: SRS definition |
| 15. ANS: C | PTS: 1 | TOP: Statistical significance |
| 16. ANS: C | PTS: 1 | TOP: Using a random digits table |
| 17. ANS: D | PTS: 1 | TOP: Idea of random digits table |
| 18. ANS: E | PTS: 1 | TOP: Idea of random digits table |
| 19. ANS: C | PTS: 1 | TOP: Using a random digits table |
| 20. ANS: E | PTS: 1 | TOP: Using a random digits table |
| 21. ANS: D | PTS: 1 | TOP: Using a random digits table |
| 22. ANS: B | PTS: 1 | TOP: Stratified random sample |
| 23. ANS: C | PTS: 1 | TOP: Why stratify |
| 24. ANS: A | PTS: 1 | TOP: Stratification and blocking |
| 25. ANS: D | PTS: 1 | TOP: What kind of sampling? (Stratified) |
| 26. ANS: B | PTS: 1 | TOP: What kind of sampling? (Cluster) |
| 27. ANS: C | PTS: 1 | TOP: What kind of sampling? (Multistage) |
| 28. ANS: E | PTS: 1 | TOP: What kind of sampling? (Multistage) |
| 29. ANS: E | PTS: 1 | TOP: What kind of sampling? (Stratified) |
| 30. ANS: B | PTS: 1 | TOP: What kind of sampling? (Cluster) |
| 31. ANS: B | PTS: 1 | TOP: Question wording |
| 32. ANS: B | PTS: 1 | TOP: Question wording |
| 33. ANS: B | PTS: 1 | TOP: Question wording |
| 34. ANS: D | PTS: 1 | TOP: What kind of bias? (Nonresponse) |
| 35. ANS: E | PTS: 1 | TOP: What kind of bias? (Response bias) |
| 36. ANS: C | PTS: 1 | TOP: What kind of bias? (Undercoverage) |
| 37. ANS: C | PTS: 1 | TOP: Principles of experimental design |
| 38. ANS: E | PTS: 1 | TOP: Experiment vs. Observational study |
| 39. ANS: A | PTS: 1 | TOP: Experiment vs. Observational study |
| 40. ANS: B | PTS: 1 | TOP: Identify response variable |
| 41. ANS: B | PTS: 1 | TOP: Experiment vs. Observational study |

42. ANS: C	PTS: 1	TOP: Confounding
43. ANS: E	PTS: 1	TOP: Identify response variable
44. ANS: A	PTS: 1	TOP: Placebo effect
45. ANS: E	PTS: 1	TOP: Block design
46. ANS: D	PTS: 1	TOP: Experiment vs. Observational study
47. ANS: C	PTS: 1	TOP: Identify explanatory variable
48. ANS: A	PTS: 1	TOP: Confounding
49. ANS: D	PTS: 1	TOP: Block design
50. ANS: B	PTS: 1	TOP: Identify response variable
51. ANS: A	PTS: 1	TOP: Identify factors
52. ANS: B	PTS: 1	TOP: Identify experimental units
53. ANS: D	PTS: 1	TOP: Lack of realism
54. ANS: A	PTS: 1	TOP: Identify factor
55. ANS: D	PTS: 1	TOP: Confounding
56. ANS: A	PTS: 1	TOP: Confounding
57. ANS: C	PTS: 1	TOP: Confounding
58. ANS: B	PTS: 1	TOP: Confounding
59. ANS: D	PTS: 1	TOP: Purpose of randomization
60. ANS: A	PTS: 1	TOP: Purpose of control
61. ANS: C	PTS: 1	TOP: Purpose of replication
62. ANS: C	PTS: 1	TOP: Double blind