

Krause, Corts, Dolderman, Smith, Psychological Science, Canadian Edition,  
Chapter 2: Reading and Evaluating Scientific Research

1. By studying a \_\_\_\_\_, scientists hope that they can generalize the results of their investigation to the \_\_\_\_\_.

- a. sample; population
- b. population; sample
- c. convenience sample; random sample
- d. random sample; convenience sample

Answer: A

Module 2.1

2. Which of the following is an example of demand characteristics affecting an experiment?

- a. An experimenter draws the wrong conclusions from a study because she did not use the correct statistical analysis.
- b. A participant changes his response to a question because he has the feeling that the experimenter wants him to do so.
- c. An experimenter stops using a test because it does not appear to be reliable.
- d. A participant in a double-blind experiment believes she is in the control group.

Answer: B

Module 2.1

3. Why is it a bad idea to draw conclusions from anecdotal evidence?

- a. Such conclusions usually go against common sense.
- b. Anecdotes are reliable only if they come from experts, which they rarely do.
- c. Anecdotes are a single-blind technique, not a double-blind method.
- d. There is no way to know if the anecdote is true or if it will generalize to other people and situations.

Answer: D

Module 2.1

4. What does a correlation coefficient of -0.94 indicate about two variables?

- a. The variables are weakly associated, with both increasing together.
- b. The variables are strongly associated, with both increasing together.
- c. The variables are weakly associated, with one increasing as the other decreases.
- d. The variables are strongly associated, with one increasing as the other decreases.

Answer: D

Module 2.2

5. Most people would agree that anxiety can lead to sleep loss. However, Dr. Jenkins believes that sleep deprivation can also cause increased anxiety. Which research method would allow him to test a cause-effect relationship between the two?

- a. Naturalistic observation
- b. Experimental
- c. Correlational
- d. Survey

Answer: B

Module 2.2

6. Which of the following statements describes the amount of cognitive and emotional risk to participants allowed in psychological research today?

- a. Any amount of risk is acceptable.
- b. No amount of risk is acceptable.
- c. A little risk is always acceptable, but more than minimal risk is never acceptable.
- d. The amount of acceptable risk depends in part on the likely benefits from the study.

Answer: D

Module 2.3

7. The use of deception in psychological research is:
- not a serious issue.
  - never acceptable.
  - generally acceptable when absolutely necessary for the research.
  - acceptable only in nonhuman research.

Answer: C  
Module 2.3

8. Under which of the following circumstances would the mean be the best measure of central tendency to use?
- The data have a normal distribution.
  - The data are positively skewed.
  - The data are negatively skewed.
  - The mean is always the best measure of central tendency

Answer: A  
Module 2.4

9. A teacher notices that, on the last science test, some students did very well while other students performed poorly or had grades in the middle of the pack. If she wanted to measure how "spread out" all of the scores were, which descriptive statistic could she use?

- Median
- Mode
- Standard deviation
- Mean

Answer: C  
Module 2.4

10. Keisha performs an experiment with two randomly assigned groups of school children. The first group is allowed 15 minutes of recess play before a math test, while the second group watches a video before the test. When she analyzes the test scores, she finds that there is a statistical difference between the groups, with the recess group scoring higher on average. Which conclusions can be drawn from this result?

- The difference between the scores for the two groups is probably due to random chance.
- The difference between the scores for the two groups is likely due to their differing pretest activities, and did not happen by chance.
- Students who are good at math prefer recess to watching a video.
- Students who are good at math prefer watching a video to recess.

Answer: B  
Module 2.4

- 1) Before beginning an experiment, researchers use operational definitions to define exactly how variables like "intelligence" or "happiness" will be measured.

*Correct: Operational definitions are statements that describe the procedures (or operations) and/or specific measures that are used to record observations. By carefully defining psychological terms such as "intelligence" or "happiness," everyone can understand exactly how these variables are being objectively measured.*

Diff: 2

Type: FIB

Page Reference: 33

Skill: Factual

Objective: Know the key terminology related to the principles of scientific research.

- 2) Demand characteristics are a major problem in psychology research, and can cause participants to change their behavior based on how they think they are supposed to behave.

*Correct: Demand characteristics are inadvertent cues given off by the experimenter or the experimental context that provide information about how participants are expected to behave. Demand characteristics can range from very subtle to obvious influences on the behavior of research participants*

Diff: 2

Type: FIB

Page Reference: 36-38

Skill: Conceptual

Objective: Understand how biases might influence the outcome of a study.

- 3) Before research findings can be published they go through peer review, which is a process in which papers submitted to publication in scholarly journals are read and critiqued by experts in the specific field of study.

*Correct: In the peer review process, the editors and reviewers serve as gatekeepers for the discipline, ensuring that the best research is made public.*

Diff: 2

Type: FIB

Page Reference: 39

Skill: Factual

Objective: Know the key terminology related to the principles of scientific research.

- 4) Tabitha is convinced that vaccines cause autism because her friend's child was diagnosed with autism only a week after being vaccinated. Because Tabitha's "evidence" is essentially a story about one person, it should be considered anecdotal evidence and cannot be considered reliable.

*Correct: Anecdotal evidence is an individual's story about an observation or event that is used to make a claim as evidence. Although sometimes correct, it is too unreliable to form a basis for scientific conclusions, even if the basic facts of the story are correct.*

Diff: 2

Type: FIB

Page Reference: 41

Skill: Applied

Objective: Analyze whether anecdotes, authority figures, and common sense are reliably truthful sources of information.

- 5) Case studies, naturalistic observation, and surveys and questionnaires are all types of descriptive research, because they can only be used to collect observations.

Correct: *The goal of descriptive research is to simply describe the thing being studied. In psychology, this is usually accomplished by using case studies, naturalistic observation, or surveys and questionnaires.*

Diff: 2

Type: FIB

Page Reference: 45

Skill: Conceptual

Objective: Know the key terminology related to research designs.

- 6) Experimental designs are the only research method that can provide strong evidence for cause-and-effect relationships.

Correct: *It is the manipulation of variables along with random assignment that allows an experiment to make cause-and-effect conclusions about the independent and dependent variables.*

Diff: 2

Type: FIB

Page Reference: Module 2.2

Skill: Factual

Objective: Understand how experiments help demonstrate cause-and-effect relationships.

- 7) To study the effect of subliminal advertising on consumer behavior, participants were randomly assigned to watch a movie either with or without subliminal advertising. The group of participants that saw the movie without the ads is called the control group.

Correct: *A control group is the group that does not receive the treatment and therefore serves as a comparison for the experimental group(s).*

Diff: 2

Type: FIB

Page Reference: 52

Skill: Applied

Objective: Know the key terminology related to research designs.

- 8) Research participants in psychology studies must give informed consent, meaning that they are told about the experiment—including any potential risks—and then freely agree to participate.

Correct: *Current research practice uses the concept of informed consent: A potential volunteer must be informed (know the purpose, tasks, and risks involved in the study) and give consent (agree to participate based on the information provided) without pressure.*

Diff: 2

Type: FIB

Page Reference: 56

Skill: Conceptual

Objective: Know the key terminology of research ethics.

- 9) The normal distribution is a commonly occurring distribution that is characterized by its symmetrical shape with values clustered around a mean value.

*Correct: A normal distribution (sometimes called the bell curve) is a symmetrical distribution with values clustered around a central, mean value. Many variables wind up in a normal distribution, such as the scores on most standardized tests or the average high temperature in Moose Jaw, Saskatchewan, throughout the month of January.*

Diff: 1

Type: FIB

Page Reference: 65

Skill: Conceptual

Objective: Know the key terminology of statistics.

- 10) If the difference between groups in an experiment is unlikely to have occurred by random chance alone, the difference is said to be statistically significant.

*Correct: A difference is said to be statistically significant when the analyses indicate that there is a lot probability that the outcome occurred by chance.*

Diff: 2

Type: FIB

Page Reference: 70

Skill: Conceptual

Objective: Know the key terminology of statistics.

- 1) A large group of people whom you want to know about is called a \_\_\_\_\_.
- a. control group
  - b. treatment group
  - c. population
  - d. sample

Answer: c

Page Reference: 35

2) A scientist, conducting a research study on sleep and learning, questions her own objectivity and decides to let a third person, not associated with conducting the experiment, score the tests. The scientist is probably trying to eliminate \_\_\_\_\_.

- a. experimenter bias
- b. sample bias
- c. control bias
- d. treatment bias

Answer: a

Page Reference: 37

3) A psychologist, studying pilot trainees, picks a select group of trainees who she hopes representative of all other trainees. The group of trainees being studied by this psychologist is collectively known to researchers as a \_\_\_\_\_.

- a. sample
- b. population
- c. target group
- d. control group

Answer: a

Page Reference: 35

4) Expectations by the experimenter that might influence the results of an experiment or their interpretation are called \_\_\_\_\_.

- a. experimental blinds
- b. experimenter bias
- c. sample bias
- d. treatment bias

Answer: b

Page Reference: 37

5) A subset of cases selected from a larger population is a \_\_\_\_\_.

- a. control group
- b. target group
- c. treatment group
- d. sample

Answer: d

Page Reference: 35

6) A sample that does not truly represent the population in question is known as a \_\_\_\_\_ sample.

- a. random
- b. chance
- c. biased
- d. representative

Answer: c

Page Reference: 35

7) Experimenter bias can best be controlled using \_\_\_\_\_.

- a. a placebo
- b. double-blind control
- c. randomization
- d. subjects who do not know the purpose of the study

Answer: b

Page Reference: 37

8) One of the main reasons for using a laboratory for psychological research is to

- a. prevent subjects from escaping.
- b. study behaviour in a natural setting.
- c. do large-scale studies.
- d. allow the researchers to control certain factors.

Answer: d

Page Reference: 34

9) A "fake treatment" is one way to define a \_\_\_\_\_.

- a. decoy
- b. demand characteristic
- c. control group
- d. placebo

Answer: d

Page Reference: 38

10) To determine if sugar-rich diets affect hyperactivity in kids, a researcher prepared two daily menus that children would receive for a 30-day period. A high-sugar diet was given to the boys, while the girls had a menu that seemed identical but was not a high-sugar diet. At the end of 30 days, the boys and girls were evaluated to determine their levels of hyperactivity. In the study, the high-sugar diet is the \_\_\_\_\_.

- a. placebo
- b. independent variable
- c. dependent variable

d. control group

Answer: b

Page Reference: 38

11) Dr. Welsh is doing experiments using drugs. He is concerned that his subjects will respond to demand characteristics. He may want to control for this by using which of the following?

a. stratification

b. two independent variables

c. a placebo

d. randomization

Answer: c

Page Reference: 38

12) Mr. Marshall hired June to collect data from a group of subjects. Neither June nor the subjects were aware of the independent variable that Mr. Marshall had manipulated. This is an example of \_\_\_\_\_.

a. randomization

b. a placebo

c. double-blind control

d. experimenter bias

Answer: c

Page Reference: 39

13) Experimenter bias can best be controlled using \_\_\_\_\_.

a. a placebo

- b. double-blind control
- c. randomization
- d. subjects who do not know the purpose of the study

Answer: b

Page Reference: 39

14) Observing behaviour as it happens in real-life natural settings without imposing laboratory controls is known as the \_\_\_\_\_.

- a. naturalistic observation method
- b. experimental method
- c. correlational method
- d. psychometric approach

Answer: a

Page Reference: 47

15) Research in which a carefully selected group of people is asked a set of predetermined questions in interviews or through questionnaires is known as \_\_\_\_\_.

- a. correlational research
- b. case study research
- c. survey research
- d. experimental research

Answer: c

Page Reference: 48

16) A research method in which the real-life behaviour of a pre-selected person or a group is studied in depth for some time through the use of observation, interviews, and writings (such as letters) is the \_\_\_\_\_ method of research.

- a. survey
- b. psychometric
- c. case study
- d. naturalistic observation

Answer: c

Page Reference: 45

17) As part of an assignment, Bill's class was asked to complete an anonymous questionnaire on prejudice. Which research method was Bill's professor using?

- a. field experiment
- b. survey
- c. naturalistic observation
- d. laboratory experiment

Answer: b

Page Reference: 48

18) Naturalistic observation is \_\_\_\_\_.

- a. re-creating natural conditions in the laboratory as closely as possible to make an experiment more valid
- b. studying behaviour in its natural context
- c. basically the same process as objective introspection
- d. observing behaviour in the lab without taking formal notes or using technological equipment to measure the experiment findings

Answer: b

Page Reference: 47

19) Collecting objective data without interference in the subject's normal environment is associated with \_\_\_\_\_.

- a. survey research
- b. applied research
- c. laboratory research
- d. naturalistic observation

Answer: d

Page Reference: 47

20) Positive correlation shows

- a. the extent to which two independent variables change together.
- b. that as one independent variable increases, another decreases.
- c. that as one variable changes, another changes in the same direction.
- d. that as one variable changes, another changes in the opposite direction.

Answer: c

Page Reference: 50

21) A researcher wished to study the relationship between high school grades and post-secondary grades. Of the following research methods, which would be the most appropriate?

- a. case study
- b. correlation
- c. experiment

d. survey

Answer: b

Page Reference: 50

22) A correlation of .00 means

- a. you made a mistake in calculation.
- b. you did not find out anything about the relationship between the two variables.
- c. the two variables are unrelated.
- d. everyone who scored low on one variable scored high on the other variable, and vice versa.

Answer: c

Page Reference: 50

23) A correlation tells us

- a. whether a cause-effect relationship exists.
- b. whether two variables are related
- c. whether or not a test is efficient.
- d. if people are responding to demand characteristics.

Answer: b

Page Reference: 49

24) A psychologist uses the correlational method to \_\_\_\_\_.

- a. explain the effects of one variable on another
- b. compare two groups of subjects
- c. determine what causes a variable to change

d. identify relationships between variables

Answer: d

Page Reference: 49–50

25) As children grow older, their discretionary income usually increases. The best conclusion to draw about the variables age and income are that they are

- a. causally related.
- b. uncorrelated.
- c. negatively correlated.
- d. positively correlated.

Answer: d

Page Reference: 50

26) In an experiment to test the effects of anxiety on performance, the dependent variable is the \_\_\_\_\_.

- a. amount of anxiety
- b. age of the person
- c. person's performance
- d. cause of the anxiety

Answer: c

Page Reference: 52

27) In an experiment, a researcher manipulates one variable to see how it affects a second variable. The second variable, which is observed for any possible effects, is called the \_\_\_\_\_.

- a. dependent variable
- b. control variable
- c. independent variable
- d. hypothetical variable

Answer: a

Page Reference: 52

28) In a controlled experiment, the group subjected to a change in the independent variable is called the \_\_\_\_\_ group.

- a. independent
- b. experimental
- c. dependent
- d. control

Answer: b

Page Reference: 52

29) If explanation of the causes of thoughts, feelings, and behaviour is a psychologist's goal, then the \_\_\_\_\_ method of research should be used.

- a. correlational
- b. experimental
- c. survey
- d. naturalistic observation

Answer: b

Page Reference: 51–52

30) In a controlled experiment, the group not subjected to a change in the independent variable, and used for comparison with the group receiving the experimental change, is the \_\_\_\_\_ group.

- a. independent
- b. experimental
- c. dependent
- d. control

Answer: d

Page Reference: 52

31) In an experiment, a researcher manipulates one variable to see how it affects a second variable. The manipulated variable is called the

- a. dependent variable.
- b. experimental variable.
- c. independent variable.
- d. placebo.

Answer: c

Page Reference: 52

32) A group of students was asked to write an essay in support of the legalization of marijuana. They were paid \$0.50. Another group of students received \$2.00 for the same task. It was subsequently found that those students who received only \$0.50 developed a more positive attitude towards the legalization of marijuana. The experiment in this study was using (the)

- a. correlational method.
- b. experimental method.
- c. naturalistic observation.
- d. survey research.

Answer: b

Page Reference: 51–52

33) Using both independent and dependent variables is associated with which of the following types of research used in psychology?

- a. experimentation
- b. naturalistic observation
- c. correlation
- d. correlation and experimentation

Answer: a

Page Reference: 52

34) A researcher, based on her review of relevant scientific studies, believes that there is a relationship between the frequency of a baby's crying and whether it was nursed at set intervals or on a demand schedule. If this belief were tested by experimentally manipulating feeding schedules, the feeding schedule would be called the

- a. independent variable.
- b. dependent variable.
- c. extraneous variable.
- d. control factors.

Answer: a

Page Reference: 52

35) A researcher, based on her review of relevant scientific studies, believes that there is a relationship between the frequency of a baby's crying and whether it was nursed at set intervals

or on a demand schedule. If this belief were tested by experimentally manipulating feeding schedules, frequency of crying would be called the

- a. latent factor.
- b. dependent variable.
- c. independent variable.
- d. control factor.

Answer: b

Page Reference: 52

36) The process of establishing causal relationships is associated most with

- a. naturalistic observation.
- b. experiments.
- c. correlation.
- d. surveys.

Answer: b

Page Reference: 51–52

37) A researcher tests the hypothesis that students who study in the room where they take their tests will perform better on the tests than students who study in other rooms. She requires one group to study in the classroom where the exam is given and another group to study in the library. All students take the test in the classroom, and their test performance is compared. In this example, where students study is the

- a. independent variable.
- b. dependent variable.
- c. manipulation.
- d. hypothesis.

Answer: a

Page Reference: 52

38) In psychological studies, random assignment is used to ensure that

- a. there will be an independent and a dependent variable.
- b. each person has an equal chance of being assigned to each group.
- c. the control group does not know the purpose of the study.
- d. the experimenter won't know who is in each group.

Answer: b

Page Reference: 51

39) The method of psychological research that utilizes a control group, a dependent variable, and an independent variable is

- a. the experiment.
- b. the survey.
- c. the case study.
- d. naturalistic observation.

Answer: a

Page Reference: 51–52

40) Professor McSpell designed an experiment to test her hypothesis that exercise will increase spelling ability. She divided children into three groups and had one group do 10 minutes of exercises, one group do 30 minutes of exercises, and the third group do no exercise. She then tested all three groups of children to see how many words they could spell correctly on a spelling test. In this experiment, the scores on the spelling test serve as the

- a. dependent variable.
- b. independent variable.

- c. control group.
- d. reliability measure.

Answer: a

Page Reference: 52

41) Which of the following is a strength of experiments?

- a. They cannot be repeated by anyone other than the experimenter.
- b. They allow for the establishment of cause-effect relationships.
- c. They are not subject to demand characteristics since the subjects do not know they are being observed.
- d. They allow us to draw definitive conclusions about behaviour in the natural environment based on subjects' behaviour in the laboratory.

Answer: b

Page Reference: 53

42) In an experiment, the "measurable aspect of the behaviour of the subject" is called the \_\_\_\_\_ variable.

- a. dependent
- b. focal
- c. independent
- d. control

Answer: a

Page Reference: 52

43) The purpose of an experiment is to discover whether there is a relationship between the \_\_\_\_\_ and the \_\_\_\_\_.

- a. independent variable; control variable
- b. dependent variable; control variable
- c. control group; experimental group
- d. independent variable; dependent variable

Answer: d

Page Reference: 52

44) Cause-and-effect conclusions can be drawn from the results of an experiment because

- a. it is almost always performed in a laboratory setting.
- b. statistical analysis can be applied to data from an experiment.
- c. the independent variable is manipulated while other possible causes of change in the dependent variable are held constant.
- d. several groups of subjects, not just one sample, are typically investigated in a laboratory experiment.

Answer: c

Page Reference: 52

45) In an experiment on the effects of level of motivation on the performance of typists, the researcher randomly assigned one-third of her subjects to each of three levels of motivation (and then induced different levels of motivation in the three groups). She measured the average words typed per minute by each group, and found that performance was highest under medium motivation, average under low motivation, and worst under high motivation. What was the independent variable in this experiment?

- a. motivation
- b. typing speed
- c. variation in typing speed
- d. manipulation of typing speed

Answer: a

Page Reference: 52

46) A psychologist wanted to see if people are more prone to seek the company of others when anxious than when calm. He randomly assigned half of his subjects to an anxiety group and then told them that, as part of the study, they would receive electric shocks. He did not frighten the other group of subjects. Finally, he recorded how many subjects in each group chose to be "tested" in a group setting and how many chose to be "tested" alone. What was the independent variable in this study?

- a. tendency to desire the company of others
- b. level of shock
- c. level of anxiety
- d. the anxious group

Answer: c

Page Reference: 52

47) In an experiment, four groups of college students used different memorizing strategies to learn the material in one chapter of a textbook. Then each group was given the same multiple-choice test on the material. What was the dependent variable in this study?

- a. the students' performance on the test
- b. the four different groups
- c. the four different memorizing strategies
- d. manipulation of memorizing strategies

Answer: a

Page Reference: 52

48) A psychologist wanted to see if people are more prone to seek the company of others when anxious than when calm. He randomly assigned half of his subjects to an anxiety group and then

told them that, as part of the study, they would receive electric shocks. He did not frighten the other group of subjects. Finally, he recorded how many subjects in each group chose to be "tested" in a group setting and how many chose to be "tested" alone. What was the dependent variable in this study?

- a. the two groups
- b. the level of anxiety
- c. preference for being alone or in a group
- d. manipulation of anxiety

Answer: c

Page Reference: 52

49) A psychologist wanted to see if people are more prone to seek the company of others when anxious than when calm. He randomly assigned half of his subjects to an anxiety group and then told them that, as part of the study, they would receive electric shocks. He did not frighten the other group of subjects. Finally, he recorded how many subjects in each group chose to be "tested" in a group setting and how many chose to be "tested" alone. In this study, the group that was NOT frightened would be called the \_\_\_\_\_ group.

- a. experimental
- b. control
- c. placebo
- d. test

Answer: b

Page Reference: 52

50) The purpose of a control group in an experiment is to

- a. serve as a check on the interpretation of results.
- b. increase the ability to generalize the findings.
- c. manipulate the dependent variable.

d. represent the general, nonlaboratory population.

Answer: a

Page Reference: 52

51) In an experiment, the group of subjects to which the experimental group is compared is called the

- a. comparison group.
- b. standard group.
- c. confederate group.
- d. control group.

Answer: d

Page Reference: 52

52) In an experiment concerning the effect of auditory feedback on accuracy in writing computer programs, one group hears a computer-simulated voice say each character or symbol that they type in as they are writing their programs. The second group does not receive the auditory feedback as they type their program lines. This second group is the \_\_\_\_\_ group.

- a. experimental
- b. control
- c. placebo
- d. confederate

Answer: b

Page Reference: 52

53) Why is it essential that the experimental and control groups be treated identically in every respect but one?

- a. so that the dependent variable can be accurately measured
- b. so that the results will apply outside the laboratory setting.
- c. so that if the behaviour of the two groups differs, the difference can be credited to the one thing that distinguished the groups from one another
- d. so that if the behaviour of the two groups differs, that difference can be used to establish a functional relationship between the independent and dependent variables

Answer: d

Page Reference: 52

54) An experiment was run in which group A was given 3 minutes to study a word list, while group B was given 10 minutes to study the same list. Later, both groups were asked to recall words from the list. In this study, the number of words recalled is the \_\_\_\_\_.

- a. independent variable
- b. dependent variable
- c. placebo
- d. control group

Answer: b

Page Reference: 52

55) To obtain objective information, researchers sometimes must deceive their subjects. Ethically, research involving deception must always \_\_\_\_\_.

- a. pay participants
- b. maintain subject anonymity
- c. use double-blind control
- d. explain the deception to the subjects after the data are collected and obtain their informed consent to use the information obtained

Answer: d

Page Reference: 58

56) Sasha read about a study in the newspaper that reported a relationship between schizophrenia and crime. What type of research design was most likely used in this study?

- a. naturalistic observation
- b. case study design
- c. correlational design

Correct: *Correlation is used to study things that cannot be manipulated in a lab, such as criminal acts.*

- d. experimental design

Answer: c

Diff: 1

Type: MC

Page Reference: 49, Module 2.2

Skill: Applied

Objective: Know the key terminology related to research designs.

57) Which term best describes the correlation between depression and fatigue?

- a. illusory
- b. zero
- c. positive

Correct: *Two variables that increase or decrease together are positively correlated.*

- d. negative

Answer: c

Diff: 2

Type: MC

Page Reference: 49, Module 2.2

Skill: Factual

Objective: Understand what it means when variables are positively or negatively correlated.

58) Which term best describes the correlation between the full moon and violent crime?

- a. positive
- b. negative
- c. zero
- d. illusory

Correct: *Many believe there is a correlation between violent crime and the moon but no correlation actually exists.*

Answer: d

Diff: 2

Type: MC

Page Reference: 49, Module 2.2

Skill: Applied

Objective: Understand what it means when variables are positively or negatively correlated.

59) What is the primary weakness of a scale that adds two kilograms to everything it weighs?

- a. poor test-retest reliability
- b. low interrater reliability
- c. the placebo effect
- d. lack of validity

Correct: *A scale that does not measure what it is intended to measure is not valid.*

Answer: d

Diff: 3

Type: MC

Page Reference: 32,Module 2.1

Skill: Applied

Objective: Understand the five characteristics of quality scientific research.

60) Under which circumstance is the use of deception justified by ethics review boards?

a. when the study could not have been conducted without deception

Correct: *Some topics of value cannot be studied without some deception.*

b. when the research involves a medical or therapeutic intervention

c. when participants might not agree to participate unless deception is used

d. when the placebo effect is likely to occur

Answer: a

Diff: 2

Type: MC

Page Reference: 57–58,Module 2.3

Skill: Factual

Objective: Analyze the role of using deception in psychological research.

61) When plotting data, Dr. Ryeburn notes that the distribution has an elongated tail to the right. Which descriptive statistic would offer the best measure of central tendency in this case?

a. mean

b. median

Correct: *When a distribution is skewed, the median gives a better measure of central tendency.*

c. standard deviation

d. range

Answer: b

Diff: 1

Type: MC

Page Reference: 66, Module 2.4

Skill: Conceptual

Objective: Analyze the choice of central tendency statistics based on the shape of the distribution.

62) Dr. Jamal has decided to increase the sample size of a study from 20 participants to 100 participants. What is the most likely impact of this decision?

- a. The results are more likely to be practically significant.
- b. The results are more likely to be statistically significant.

Correct: *Larger sample sizes increase statistical power.*

- c. The results are more likely to have face validity.
- d. The results are more likely to be reliable.

Answer: b

Diff: 1

Type: MC

Page Reference: 70, Module 2.4

Skill: Applied

Objective: Understand how and why psychologists use significance tests.

63) Mario is researching the topic of obsessive-compulsive disorder as part of a course requirement. Which source of online information would most likely be peer reviewed?

- a. Wikipedia
- b. AboutOCD.com
- c. *Scientific American* website

Correct: *This website reports scientific studies from peer-reviewed journals.*

d. YouTube

Answer: c

Diff: 1

Type: MC

Page Reference: 39, Module 2.1

Skill: Applied

Objective: Understand the importance of reporting and storing data.

64) In a test of the effects of sleep deprivation on problem-solving skills, research participants are allowed to sleep either four or eight hours on each of three consecutive nights. This research is an example of

a. naturalistic observation.

b. survey research.

c. a case study.

d. an experiment.

Correct: *When there is an independent variable and a dependent variable, you have an experiment.*

Answer: d

Diff: 1

Type: MC

Page Reference: 51, Module 2.2

Skill: Conceptual

Objective: Apply the terms and concepts of experimental methods to research examples.

1) What are the five characteristics of good research described in the textbook? Briefly explain each.

Answer:

A good answer will include the following key points.

- Research should be based on measurements that are
  - \* objective: consistent across instruments and observers
  - \* valid: actually measure what they claim to measure
  - \* reliable: provide consistent answers when remeasured
- Good research can be generalized to situations, individuals, and events beyond the original study.
- It should use techniques to reduce bias from both the participants and the experimenters.
- Research should be made public, usually through the peer-review process and publication in an academic journal.
- Finally, it must be possible for other researchers to replicate the results of good research.

Page Reference: 32–35

2) Anecdotal evidence, appeals to authority, and appeals to common sense are all considered poor forms of evidence. Provide an example of each and explain why claims based on them cannot be trusted.

Answer:

*Anecdotal evidence* is the experience of one person generalized into a theory, such as a person listens to hypnosis CDs and loses 58 pounds in three months. This is anecdotal evidence and not real evidence because no hypothesis was tested in developing the theory. The result could have been for any number of things other than the CD causing the weight loss. *Appeal to authority* is evidence from an “expert” that is assumed to be valid and reliable simply because an expert said it was true. An expert may claim to have found a great weight-loss program but experts can be wrong and experts can have hidden agendas. It is important to see what the expert may have to gain by claiming an untested theory is true. *Appeal to common sense* is evidence that sounds like it must be true but hasn’t necessarily been tested. A great example is that people long thought that the earth was stationary and the centre of the universe because this theory made sense based

on their other (limited) knowledge of the cosmos. The best theory is always based on the results of hypotheses tested using the scientific method.

Page Reference: 41–42

3) Describe and compare correlational research and experimental research. What key advantage does experimental research have over correlational research?

Answer:

Correlational research shows you that a change in one variable will likely result in a change in another variable but this type of research does not determine why that change occurs. A third variable could cause both variables to change. Experimental research is designed to test a hypothesis in tightly controlled conditions so that a cause-and-effect relationship can be established.

Page Reference: 49–53

1) Which of the following is subjective?

- a. the height of a tree
- b. the speed of a reflex
- c. the weight of a soil sample
- d. the value of a painting

Correct: *Subjective refers to observations that are shaped by prior beliefs, expectations, experiences, and even mood. In contrast, observations like height, speed, and weight are objective, because everyone should generally agree on them given the same tools, the same methods, and the same context.*

Answer: d

Diff: 1

Type: MC

Page Reference: 32

Skill: Conceptual

Objective: Know the key terminology related to the principles of scientific research.

2) \_\_\_\_\_ assumes that there are facts about the world that can be observed and tested independently from the individual who describes them.

- a. Subjectivity
- b. Objectivity
- c. Validity
- d. Generalizability

Correct: *Objectivity suggests that everyone should be able to agree on certain facts given the same tools, the same methods, and the same context.*

Answer: b

Diff: 1

Type: MC

Page Reference: 32

Skill: Factual

Objective: Know the key terminology related to the principles of scientific research.

3) Which of the following is one of the five characteristics of quality research listed in the textbook?

- a. using subjective measurements
- b. keeping sensitive results secret
- c. making sure results can be replicated
- d. avoiding generalizing results

*Correct: According to the textbook, quality scientific research 1. is based on measurements that are objective, valid, and reliable; 2. can be generalized; 3. uses techniques that reduce bias; 4. is made public; and 5. can be replicated.*

Answer: c

Diff: 1

Type: MC

Page Reference: 32

Skill: Factual

Objective: Understand the five characteristics of quality scientific research.

4) In order to make objective measurements, psychologists generally measure \_\_\_\_\_.

- a. behaviour
- b. introspection
- c. thoughts
- d. feelings

*Correct: Objective measurements are measurements that, within an allowed margin of error, are consistent across instruments and observers. Because behaviour can be seen and recorded, it can generally be measured objectively. Thoughts and feelings are much more difficult to measure objectively, because they cannot be directly measured.*

Answer: a

Diff: 2

Type: MC

Page Reference: 32

Skill: Conceptual

Objective: Understand the five characteristics of quality scientific research.

5) A group of researchers are studying depression in a sample of patients. Each researcher independently assesses the level of depression in each patient, but their assessments do not match. The problem with the research is that

- a. depression cannot be studied scientifically.
- b. the researchers do not have an objective measure of depression.
- c. there are too many researchers.
- d. the patients are not really depressed.

*Correct: Objective measurements are measurements that, within an allowed margin of error, are consistent across instruments and observers. In this example, the fact that different researchers cannot agree on the depression levels in the same patient indicates that they are not using an objective measurement.*

Answer: b

Diff: 2

Type: MC

Page Reference: 32–34

Skill: Applied

Objective: Understand the five characteristics of quality scientific research.

6) In research, the object, concept, or event being measured is called a \_\_\_\_\_.

- a. data unit
- b. population
- c. variable
- d. sample

*Correct: The term variable refers to the object, concept, or event being measured. Psychologists have developed a variety of instruments to take objective measures of variables related to behaviour and thought*

Answer: c

Diff: 1

Type: MC

Page Reference: 33

Skill: Factual

Objective: Know the key terminology related to the principles of scientific research.

7) A researcher uses a blood pressure cuff (technically called a sphygmomanometer) to measure the blood pressure of participants while they are shown sexual, violent, or relaxing videos. The blood pressure measurement in this study is an example of \_\_\_\_\_.

- a. a variable
- b. a sample
- c. self-reporting
- d. a demand characteristic

*Correct: The term variable refers to the object, concept, or event being measured. Psychologists have developed a variety of instruments to take objective measures of variables related to behaviour and thought.*

Answer: a

Diff: 1

Type: MC

Page Reference: 33

Skill: Applied

Objective: Know the key terminology related to the principles of scientific research.

8) \_\_\_\_\_ is a method where researchers typically use interviews, phone surveys, and questionnaires to directly collect responses from the people being studied.

- a. Generalizing
- b. Random sampling
- c. Self-reporting
- d. Blind sampling

*Correct: A common method used by psychologists is self-reporting, a method in which responses are provided directly by the people who are being studied, typically through face-to-face interviews, phone surveys, paper and pencil tests, and web-based questionnaires.*

Answer: c

Diff: 1

Type: MC

Page Reference: 48

Skill: Conceptual

Objective: Know the key terminology related to the principles of scientific research.

- 9) The purpose of operational definitions in science is to
- a. keep participants from knowing which treatment group they are in.
  - b. reduce demand characteristics.
  - c. increase ecological validity.
  - d. carefully define terms and variables so they can be objectively studied.

*Correct: Operational definitions are statements that describe the procedures (or operations) and specific measures that are used to record observations. By carefully defining psychological terms such as "intelligence" or "happiness," everyone can understand exactly how these variables are being objectively measured.*

Answer: d

Diff: 2

Type: MC

Page Reference: 33

Skill: Conceptual

Objective: Know the key terminology related to the principles of scientific research.

10) Before beginning a study on the health effects of obesity, a group of researchers agree that, for the purposes of their research, anyone with a Body Mass Index greater than  $30 \text{ kg/m}^2$  will be considered obese. This is an example of \_\_\_\_\_.

- a. a confounding variable
- b. an operational definition
- c. convenience sampling
- d. an appeal to common sense

*Correct: Operational definitions are statements that describe the procedures (or operations) and specific measures that are used to record observations. By carefully defining the terms in a study, everyone can understand exactly how the variables are objectively measured.*

Answer: b

Diff: 1

Type: MC

Page Reference: 33

Skill: Applied

Objective: Know the key terminology related to the principles of scientific research.

11) According to your text, which of the following have researchers concluded about the "Mozart effect"?

- a. Listening to classical music, but not other types of music, causes a long-lasting improvement in several types of thinking and reasoning.
- b. Listening to all types of music causes a long-lasting improvement in several types of thinking and reasoning.

c. Listening to classical music appears to have only a small, short-lasting effect on spatial reasoning.

d. Listening to classical music has no effect on any type of thinking or reasoning.

Correct: *Despite the reaction of legislators and the general public, listening to classical music appears to only cause a small increase in spatial reasoning that only lasts for about 10 minutes.*

Answer: c

Diff: 2

Type: MC

Page Reference: 33–34

Skill: Factual

Objective: Understand the five characteristics of quality scientific research.

12) \_\_\_\_\_ is consistency of measurement.

a. Random assignment

b. Validity

c. Reliability

d. Confounding variable

Correct: *A measure demonstrates reliability when it provides consistent and stable answers across multiple observations and points in time.*

Answer: c

Diff: 1

Type: MC

Page Reference: 34

Skill: Factual

Objective: Know the key terminology related to the principles of scientific research.

13) Dr. Sparks is concerned because he gave Julie a new intelligence test that he personally designed and her scores do not seem very consistent. Which aspect of psychological testing is Dr. Sparks concerned with?

- a. validity
- b. self-report measures
- c. reliability
- d. falsifiability

*Correct: Reliability refers to how consistent and stable measurements are across multiple observations and points in time. In this example, the inconsistency of Julie's test scores indicates that the test is not reliable. Although it is likely that the test is also not valid (i.e., it does not really measure intelligence), Dr. Sparks' immediate concern is clearly with the reliability of the test.*

Answer: c

Diff: 2

Type: MC

Page Reference: 34

Skill: Applied

Objective: Apply the concepts of reliability and validity to examples.

14) When assessing patients' personalities using an "ink blot" test that she created, Dr. Hardcastle is gaining confidence in the test's reliability. Which of the following is likely to be happening?

- a. Her patients are enjoying being tested every day.
- b. The test is generating approximately the same results each time.
- c. The test is measuring what it is supposed to be measuring.
- d. The test is likely to be uninformative.

*Correct: Reliability refers to how consistent and stable measurements are across multiple observations and points in time. For the test in the example to be reliable, the results for each patient must be approximately the same each time they are retested. This does not necessarily imply that the test has validity, and is actually measuring what it is supposed to be measuring (personality).*

Answer: b

Diff: 2

Type: MC

Page Reference: 34

Skill: Applied

Objective: Apply the concepts of reliability and validity to examples.

15) Brittany, a softball player who plays catcher for the local university, has thrown out base stealers at the rates of 42, 39, and 41 percent over her three years. Her performance could be considered which of the following?

- a. valid
- b. invalid
- c. reliable
- d. not reliable

*Correct: Reliability refers to how consistent and stable measurements are across multiple observations and points in time. In this example, Brittany's performance is very consistent over the three years.*

Answer: c

Diff: 2

Type: MC

Page Reference: 34

Skill: Applied

Objective: Apply the concepts of reliability and validity to examples.

16) \_\_\_\_\_ is the extent to which a measure assesses what it claims to measure.

- a. Operationalization
- b. Reliability
- c. Validity
- d. Control group

Correct: *Validity refers to the degree to which an instrument or procedure actually measures what it claims to measure.*

Answer: c

Diff: 1

Type: MC

Page Reference: 34

Skill: Factual

Objective: Know the key terminology related to the principles of scientific research.

17) Jasmine took a self-administered online intelligence test three times yesterday and obtained scores of 124, 128, and 125. This made her feel great because the score she received from the psychologist last month at school was only a 95. What characteristic might the online test be lacking?

- a. reliability
- b. validity
- c. both reliability and validity
- d. Nothing. The test appears to have both reliability and validity.

Correct: *Validity refers to the degree to which an instrument or procedure actually measures what it claims to measure. In this example, the test is clearly reliable because she received approximately the same score each time. However, because the score is drastically higher than*

*she received on the professionally administered test, it is likely that the online test is not actually measuring her intelligence.*

Answer: b

Diff: 3

Type: MC

Page Reference: 34

Skill: Applied

Objective: Apply the concepts of reliability and validity to examples.

18) The degree to which one set of results can be applied to other situations, individuals, or events is called \_\_\_\_\_.

- a. objectivity
- b. reliability
- c. validity
- d. generalizability

*Correct: In psychological research, generalizability refers to the degree to which one set of results can be applied to other situations, individuals, or events.*

Answer: d

Diff: 1

Type: MC

Page Reference: 34

Skill: Factual

Objective: Know the key terminology related to the principles of scientific research.

19) One way to increase the possibility that research results will generalize is to study a \_\_\_\_\_ sample.

- a. small
- b. large
- c. single-person
- d. convenience

*Correct: All other things being equal, the results of studies with large samples are more likely to generalize than those conducted with smaller samples. Using convenience sampling increases the risk that the results will not generalize because it does not use random sampling.*

Answer: b

Diff: 1

Type: MC

Page Reference: 35

Skill: Factual

Objective: Know the key terminology related to the principles of scientific research.

20) Which of the following is true?

- a. Researchers typically study populations because it is often too difficult to study samples.
- b. Researchers typically study samples because it is often too difficult to study populations.
- c. Researchers typically include both samples and populations in their research.
- d. Researchers typically avoid studying both populations and samples.

*Correct: A population is the group that researchers want to generalize about. However, because populations are usually very large, psychologists typically study a sample (i.e., a select group of population members). Once the sample has been studied, then the results may be generalized to the population as a whole.*

Answer: b

Diff: 1

Type: MC

Page Reference: 35

Skill: Factual

Objective: Know the key terminology related to the principles of scientific research.

21) The most important factor to ensure that one's results apply to other people in other settings is to use

- a. a convenience sample.
- b. extremely small sample sizes.
- c. random assignment.
- d. a random sample.

*Correct: In order for a sample to generalize to a population psychologists prefer to use random sampling and large sample sizes whenever possible. The idea of random sampling is distinct from random assignment, which is a technique used in experiments to make groups as similar as possible before manipulating the independent variable.*

Answer: d

Diff: 2

Type: MC

Page Reference: 35

Skill: Factual

Objective: Know the key terminology related to the principles of scientific research.

22) Although not ideal, researchers often use \_\_\_\_\_ samples, which are samples of individuals that are the most readily available.

- a. random

- b. confound
- c. ecological
- d. convenience

Correct: *Obtaining a true random sample can be extremely difficult to do. In practice, psychologists are more likely to settle for convenience samples, which are samples of individuals that are the most readily available.*

Answer: d

Diff: 1

Type: MC

Page Reference: 35

Skill: Factual

Objective: Know the key terminology related to the principles of scientific research.

23) *Ecological validity* refers to

- a. whether the results of a laboratory study can be applied to the real world.
- b. the impact of a scientific study on the environment.
- c. the degree to which animal research can be applied to humans.
- d. the degree to which naturalistic research techniques are used.

Correct: *Because of the artificial nature of the laboratory research, the results sometimes have low ecological validity, which is the degree to which the results of a laboratory study can be applied to or repeated in the natural environment.*

Answer: a

Diff: 2

Type: MC

Page Reference: 35

Skill: Conceptual

Objective: Know the key terminology related to the principles of scientific research.

24) Ursula works in an office. One day, her boss tells her that researchers will be in the office to observe productivity. Because she knows she is being observed, Ursula finds that she is working harder than she normally does. What is this an example of?

- a. the placebo effect
- b. the Heisenberg principle
- c. a single-blind study
- d. the Hawthorne effect

Correct: *The Hawthorne effect is a term used to describe situations in which behaviour changes as a result of being observed.*

Answer: d

Diff: 2

Type: MC

Page Reference: 35

Skill: Applied

Objective: Understand how biases might influence the outcome of a study.

25) The term *demand characteristics* refers to

- a. a set of personality traits that most good scientists share.
- b. unintended cues that suggest how study participants should behave.
- c. statements that describe the specific measures that are used to record observations.
- d. claims based on anecdotal evidence.

Correct: *When studying human behaviour, a major concern is demand characteristics, inadvertent cues given off by the experimenter or the experimental context that provide information about how participants are expected to behave. Demand characteristics can range from very subtle to obvious influences on the behaviour of research participants.*

Answer: b

Diff: 2

Type: MC

Page Reference: 36–38

Skill: Factual

Objective: Understand how biases might influence the outcome of a study.

26) Louis is participating in a survey on undergraduate drug use. When the interviewer asks Louis whether he has used illegal drugs in the last 6 months, he lies and says 'no' because he doesn't want the interviewer to have a poor opinion of him. Louis's response is an example of \_\_\_\_\_.

- a. socially desirable responding
- b. sampling bias
- c. peer review
- d. an appeal to authority

*Correct: Socially desirable responding occurs when research participants respond in ways that increase the chances that they will be viewed favourably. This type of bias is particularly relevant when the study involves an interview in which the researcher has face-to-face contact with the volunteers.*

Answer: a

Diff: 1

Type: MC

Page Reference: 36

Skill: Applied

Objective: Understand how biases might influence the outcome of a study.

27) Alex, a university student, wants to know how many of her dorm mates have tried marijuana, so she decides to survey everyone on her floor. Despite rumours to the contrary, the results suggest that fewer than ten percent of her classmates have tried the drug. What is the most likely explanation for her findings?

- a. People being interviewed often change their answers to increase the chances that they will be viewed favourably.
- b. Her dorm mates did not understand the question.
- c. Alex did not calculate the findings correctly.
- d. Surveys are not an acceptable means to gather new information.

*Correct: Socially desirable responding occurs when research participants respond in ways that increase the chances that they will be viewed favourably. This type of bias is particularly relevant when the study involves an interview in which the researcher has face-to-face contact with the volunteers.*

Answer: a

Diff: 2

Type: MC

Page Reference: 36

Skill: Applied

Objective: Understand how biases might influence the outcome of a study.

28) Eila is participating in a psychological experiment for one of the graduate students at her university. She is pretty confident that she knows the true intent of the study and is trying to answer the questions accordingly. A common pitfall in experiments, Eila is falling prey to \_\_\_\_\_.

- a. intentionality
- b. the Rosenthal effect
- c. observer bias
- d. demand characteristics

Correct: *Demand characteristics are inadvertent cues given off by the experimenter or the experimental context that provide information about how participants are expected to behave.*

Answer: d

Diff: 2

Type: MC

Page Reference: 36

Skill: Applied

Objective: Understand how biases might influence the outcome of a study.

29) An important danger of the various types of research bias discussed in Chapter 2 is that they lead us

- a. to become anxious or depressed about our place in the world.
- b. to draw incorrect conclusions and then become convinced that they are accurate.
- c. to doubt our intuition and gut feelings in important real-life circumstances.
- d. to underestimate our general levels of cognitive abilities and skills.

Correct: *Both researchers and participants can be affected by bias. If procedures are not used to reduce its impact, biases can alter the results of an experiment and lead researchers to draw incorrect conclusions.*

Answer: b

Diff: 2

Type: MC

Page Reference: 36–38

Skill: Conceptual

Objective: Understand how biases might influence the outcome of a study.

30) One difficulty in conducting medical research is that participants often assume that any treatment will be effective in alleviating their symptoms. Therefore, a researcher has to design an experiment that measures the influence of \_\_\_\_\_.

- a. random selection
- b. medical confounds
- c. the Rosenthal effect
- d. the placebo effect

Correct: *The placebo effect is a measurable and experienced improvement in health or behaviour that cannot be attributable to a medication or treatment.*

Answer: d

Diff: 1

Type: MC

Page Reference: 38–39

Skill: Conceptual

Objective: Understand how biases might influence the outcome of a study.

31) When people report feeling better after taking medication even though it hasn't had time to be effective, they are experiencing \_\_\_\_\_.

- a. the experimenter bias effect
- b. low reliability
- c. the placebo effect
- d. confirmation bias

Correct: *The placebo effect is a measurable and experienced improvement in health or behaviour that cannot be attributable to a medication or treatment.*

Answer: c

Diff: 2

Type: MC

Page Reference: 38–39

Skill: Conceptual

Objective: Understand how biases might influence the outcome of a study.

32) Dr. Wilkins randomly assigns subjects to one of two groups. He is interested in the effects of caffeine on anxiety levels. He gives subjects in the first group an extra two cups of coffee a day for six months. The second group receives an extra two cups of decaffeinated coffee a day for the same time period. Importantly, subjects do not know whether they are being given regular or decaffeinated coffee. By providing one group with decaffeinated coffee, Dr. Wilkins is trying to account for which potential element of the experiment?

- a. participant fraud
- b. inter-rater reliability
- c. the placebo effect
- d. variability

*Correct: The placebo effect is a measurable and experienced improvement in health or behaviour that cannot be attributable to a medication or treatment. In this example, subjects drinking coffee may act more anxiously simply because they expect coffee to make them anxious. Because subjects do not know whether they are receiving regular or decaffeinated coffee, Dr. Wilkins can control for this effect.*

Answer: c

Diff: 2

Type: MC

Page Reference: 38–39

Skill: Applied

Objective: Understand how biases might influence the outcome of a study.

33) Lisa, a university student, had a great time at the party last night. She danced, sang karaoke, and even played the "Rock Band" video game—all behaviours that she had never exhibited in public before. She had been drinking the "punch" all night long, which she was told contained high levels of alcohol. Lisa was quite surprised to find out the next morning that the punch did NOT contain any alcohol. What concept may explain Lisa's behaviour?

- a. the Rosenthal effect
- b. illusory correlations
- c. the nocebo effect
- d. the placebo effect

*Correct: The placebo effect is a measurable and experienced improvement in health or behaviour that cannot be attributable to a medication or treatment. Lisa's change in behaviour after drinking the punch is similar to the reaction of patients when given a placebo that they expect to improve their health.*

Answer: d

Diff: 2

Type: MC

Page Reference: 38–39

Skill: Applied

Objective: Understand how biases might influence the outcome of a study.

34) What is the best way to reduce the social desirability bias in research?

- a. use random sampling
- b. provide anonymity and confidentiality
- c. use random assignment
- d. submit the research to peer review

*Correct: Socially desirable responding occurs when research participants respond in ways that increase the chances that they will be viewed favourably. The best technique for reducing the social desirability bias is by providing anonymity and confidentiality to the volunteers. Random*

*sampling, random assignment, and peer review generally cannot control for the social desirability bias.*

Answer: b

Diff: 2

Type: MC

Page Reference: 38

Skill: Conceptual

Objective: Understand how biases might influence the outcome of a study.

35) In a single-blind study, who is "blind" to the treatment?

- a. the peer reviewers
- b. the participants
- c. the experimenters
- d. both the experimenters and participants

*Correct: In a single-blind study, only the participants are prevented from knowing the true purpose of the study and which type of treatment they are receiving (for example, a placebo or a drug). In contrast, in a double-blind study, both the participants and the experimenters are "blind" to the exact treatment each participant receives until after the study has concluded.*

Answer: b

Diff: 1

Type: MC

Page Reference: 39

Skill: Factual

Objective: Know the key terminology related to the principles of scientific research.

36) An experiment is said to be \_\_\_\_\_ when neither researchers nor participants are aware of who is in the experimental or control group.

- a. single-blind
- b. unfalsifiable
- c. a placebo
- d. double-blind

Correct: *In a double-blind study, neither the participant nor the experimenter knows the exact treatment for any individual.*

Answer: d

Diff: 1

Type: MC

Page Reference: 39

Skill: Factual

Objective: Know the key terminology related to the principles of scientific research.

37) How does conducting a double-blind study attempt to remedy the effect of bias?

- a. The experimenter does not know but the participant does know what condition the participant is assigned to.
- b. The experimenter and the participant both know what condition the participant is assigned to.
- c. The experimenter knows but the participant does not know what condition the participant is assigned to.
- d. Neither the experimenter nor the participant knows what condition the participant is assigned to.

Correct: *In a double-blind study, neither the participant nor the experimenter knows the exact treatment for any individual.*

Answer: d

Diff: 1

Type: MC

Page Reference: 39

Skill: Conceptual

Objective: Know the key terminology related to the principles of scientific research.

38) A mechanism by which experts in a field carefully screen the work of their colleagues is known as \_\_\_\_\_.

- a. experimental validity
- b. experimenter bias effect
- c. peer review
- d. peer assessment

*Correct: Before research findings can be published they go through peer review—a process in which papers submitted to publication in scholarly journals are read and critiqued by experts in the specific field of study.*

Answer: c

Diff: 1

Type: MC

Page Reference: 39

Skill: Factual

Objective: Know the key terminology related to the principles of scientific research.

39) The peer review process is designed to

- a. block alternative therapies from being made available to the general public.
- b. identify flaws in a research study's methods, findings, and conclusions.
- c. make researchers feel bad when their article is not published.

d. place obstacles in front of people whose theories differ from mainstream science.

*Correct: Peer reviewers critique the methods and results of research articles submitted to journals and make recommendations to the editor regarding the merits of the research. In this process, the editors and reviewers serve as gatekeepers for the discipline, ensuring that the best research is made public.*

Answer: b

Diff: 2

Type: MC

Page Reference: 39

Skill: Conceptual

Objective: Understand the five characteristics of quality scientific research.

40) Without the process of replication as part of the scientific process, what would happen?

- a. Incorrect results would often go uncorrected.
- b. Demand characteristics would have larger effect on data.
- c. The Hawthorne effect would increase.
- d. Samples would be less representative of the populations they came from.

*Correct: Replication is the process of repeating a study and finding a similar outcome each time. This is part of the self-correcting process of science that helps to identify incorrect results.*

Answer: a

Diff: 3

Type: MC

Page Reference: 40

Skill: Conceptual

Objective: Understand the five characteristics of quality scientific research.

- 41) The main purpose of replicating studies is to
- keep the scientific community aware of the results.
  - renew drug and technology patents based on the research.
  - ensure that the results are correct.
  - secure extra funding.

Correct: *Replication is the process of repeating a study and finding a similar outcome each time. This is part of the self-correcting process of science that helps to identify incorrect results.*

Answer: c

Diff: 2

Type: MC

Page Reference: 41

Skill: Conceptual

Objective: Understand the five characteristics of quality scientific research.

- 42) Chen believes that red cars are more likely to be stolen than non-red cars because one week after she bought a red car, it was stolen. This is an example of which type of evidence?
- anecdotal
  - falsified
  - common-sense
  - authoritative

Correct: *Anecdotal evidence is an individual's story about an observation or event that is used to make a claim as evidence. Although sometimes correct, it is too unreliable to be the basis for scientific conclusions.*

Answer: a

Diff: 1

Type: MC

Page Reference: 41

Skill: Applied

Objective: Analyze whether anecdotes, authority figures, and common sense are reliably truthful sources of information.

43) Support for a claim that is based on a story about an individual or event is called \_\_\_\_\_ evidence.

- a. anecdotal
- b. narrative
- c. objective
- d. authoritative

*Correct: Anecdotal evidence is an individual's story about an observation or event that is used to make a claim as evidence. Although sometimes correct, it is too unreliable to be the basis for scientific conclusions.*

Answer: a

Diff: 1

Type: MC

Page Reference: 41

Skill: Factual

Objective: Analyze whether anecdotes, authority figures, and common sense are reliably truthful sources of information.

44) In general, which of the following is true about anecdotal evidence?

- a. It is reliable as long as the facts are correct.
- b. It takes a long time to collect.

- c. It is the basis for most scientific conclusions.
- d. It is poor and unreliable.

*Correct: Anecdotal evidence is an individual's story about an observation or event that is used to make a claim as evidence. Although sometimes correct, it is too unreliable to be the basis for scientific conclusions, even if the basic facts of the story are correct.*

Answer: d

Diff: 2

Type: MC

Page Reference: 41

Skill: Conceptual

Objective: Analyze whether anecdotes, authority figures, and common sense are reliably truthful sources of information.

45) Appeals to authority are generally considered a(n) \_\_\_\_\_ kind of evidence because \_\_\_\_\_.

- a. reliable; experts know a lot about their subjects
- b. reliable; experts don't want to ruin their reputations by being wrong
- c. unreliable; most experts don't know what they are talking about
- d. unreliable; expertise is not actually evidence

*Correct: An appeal to authority is the belief in an expert's claim even when no supporting data or scientific evidence is present. Expertise is not actually evidence; the word "expert" describes the person making the claim, not the claim itself. The expert could be mistaken, dishonest, overpaid, or misquoted.*

Answer: d

Diff: 2

Type: MC

Page Reference: 41

Skill: Conceptual

Objective: Analyze whether anecdotes, authority figures, and common sense are reliably truthful sources of information

46) Claims based on common sense

- a. should be considered true.
- b. should be considered false.
- c. may be true, but cannot be evaluated by this standard alone.
- d. should be considered true, but only if offered by an expert in the subject.

*Correct: Claims based on common sense, tradition, or novelty may be worthy of consideration, but whether something is true or not cannot be evaluated by these standards alone.*

Answer: c

Diff: 2

Type: MC

Page Reference: 42

Skill: Conceptual

Objective: Analyze whether anecdotes, authority figures, and common sense are reliably truthful sources of information.

47) Kia and her friend are discussing why so many child actors become troubled adults. Kia says, "Obviously they were spoiled as children, which made them unprepared to become adults." From a scientific point of view, what is wrong with Kia's statement?

- a. It is based on anecdotal evidence.
- b. It is an appeal to authority.
- c. It is an appeal to common sense.
- d. Nothing; it is a well-supported conclusion.

*Correct: Appeals to common sense are claims that appear to be sound, but lack supporting scientific evidence. They may be worthy of consideration, but whether something is true or not cannot be evaluated by these standards alone.*

Answer: c

Diff: 2

Type: MC

Page Reference: 42

Skill: Applied

Objective: Analyze whether anecdotes, authority figures, and common sense are reliably truthful sources of information.

48) Which of the following is one of the questions that a researcher should ask herself before conducting a research study?

- a. "How can I avoid using statistics to analyze my results?"
- b. "What research strategies should I use to test my hypothesis?"
- c. "Will I be able to prove my hypothesis?"
- d. "How can I guarantee that I obtain subjective results?"

*Correct: Because there are several types of designs, psychologists must choose the one that best addresses the research question and that is most suitable to the subject of their research. Recall from Chapter 1 that the goal of scientific research is to test hypotheses, not to prove hypotheses. Also, the goal of science is to obtain objective results, not subjective results.*

Answer: b

Diff: 2

Type: MC

Page Reference: 44–45

Skill: Conceptual

Objective: Apply the terms and concepts of experimental methods to research examples.

49) \_\_\_\_\_ research does not attempt to explain how or why something happened, but instead it is an opportunity to present observations about the characteristics of the subject.

- a. Descriptive
- b. Quasi-experimental
- c. Experimental
- d. Subjective

*Correct: The goal of descriptive research is to simply describe the thing being studied. In psychology, this is usually accomplished by using case studies, naturalistic observation, or surveys and questionnaires.*

Answer: a

Diff: 2

Type: MC

Page Reference: 45

Skill: Factual

Objective: Know the key terminology related to research designs.

50) Which of the following is NOT a descriptive research method?

- a. case study
- b. naturalistic observation
- c. experiment
- d. survey

*Correct: The goal of descriptive research is to simply describe the thing being studied. In psychology, this is usually accomplished by using case studies, naturalistic observation, or surveys and questionnaires. Experimental designs are used for determining cause-and-effect relationships.*

Answer: c

Diff: 2

Type: MC

Page Reference: 45–48

Skill: Factual

Objective: Know the key terminology related to research designs.

51) A(n) \_\_\_\_\_ involves an extremely deep and detailed information-gathering from a single individual over a long period of time.

- a. case study design
- b. correlational design
- c. experimental design
- d. naturalistic observation design

Correct: *A case study is an in-depth report about the details of a specific case.*

Answer: a

Diff: 1

Type: MC

Page Reference: 45

Skill: Factual

Objective: Know the key terminology related to research designs.

52) Sarah, a graduate student in psychology, just heard about a five-year-old child who has already learned calculus. She is thinking about conducting an in-depth study of the child for her dissertation. Sarah is considering which research method?

- a. naturalistic observation

- b. experiment
- c. correlational
- d. case study

*Correct: A case study is an in-depth report about the details of a specific case. While some of Sarah's research might involve naturalistic observation, it is unlikely that Sarah could study the child in depth using this technique.*

Answer: d

Diff: 2

Type: MC

Page Reference: 45

Skill: Applied

Objective: Apply terms and concepts of experimental methods to research examples.

53) Why is it difficult to make generalizations based on the results of case study research?

- a. Case study research is, by definition, immune to the error of making generalizations.
- b. Case studies involve far too many people to allow for generalizations. You would be better off using a research design that uses fewer participants.
- c. Because a case study involves only one or a few subjects, their actions may be atypical and not representative of a larger group of people or population.
- d. The statistics involved in case study research do not allow one to draw larger conclusions about a population.

*Correct: The main drawback to the case study design is that the findings that seem to apply to one case may not apply to others, so there is no guarantee that the case study can be generalized to other individuals and situations.*

Answer: c

Diff: 3

Type: MC

Page Reference: 46–47

Skill: Conceptual

Objective: Analyze the pros and cons of descriptive, correlational, and experimental research designs.

54) Which of the following statements is true about naturalistic observation?

- a. It recreates natural conditions in the laboratory as closely as possible to make an experiment more valid.
- b. It involves observing behaviour in its natural context.
- c. It is basically the same process as objective introspection.
- d. It involves observing behaviour in the lab without taking formal notes or using technological equipment to measure the experimental findings.

*Correct: When psychologists engage in naturalistic observation, they unobtrusively observe and record behaviour as it occurs in the subject's natural environment. Any research that takes place in an artificial laboratory setting is, by definition, not naturalistic observation.*

Answer: b

Diff: 1

Type: MC

Page Reference: 47–48

Skill: Factual

Objective: Know the key terminology related to research designs.

55) Watching behaviour in real-world settings is known as \_\_\_\_\_.

- a. a case study
- b. a correlation design
- c. naturalistic observation

d. a self-report

Correct: *When psychologists engage in naturalistic observation, they unobtrusively observe and record behaviour as it occurs in the subject's natural environment.*

Answer: c

Diff: 1

Type: MC

Page Reference: 47–48

Skill: Factual

Objective: Know the key terminology related to research designs.

56) Dr. Watson wanted to know which gender was better at sharing at the sixth-grade level, so he went to the local middle school to observe lunch periods. This is a form of \_\_\_\_\_.

a. case study

b. naturalistic observation

c. experimental design

d. confirmation bias

Correct: *When psychologists engage in naturalistic observation, as in this example, they unobtrusively observe and record behaviour as it occurs in the subject's natural environment.*

*Dr. Watson's research is not a case study because he is not studying one student in depth. It also is not an experiment, because he is only observing, not manipulating independent variables.*

Answer: b

Diff: 2

Type: MC

Page Reference: 47–48

Skill: Applied

Objective: Apply the terms and concepts of experimental methods to research examples.

57) A researcher is interested in determining how frequently bullying behaviour occurs in real-life settings. This researcher would best be advised to use the \_\_\_\_\_.

- a. case study design
- b. correlational design
- c. experimental design
- d. naturalistic observation design

*Correct: Naturalistic observation is generally the best method for studying behaviour in natural settings. A case study of one bully or victim would be unlikely to generalize to bullying in general, and correlational and experimental designs are used to study the relationships between two or more variables.*

Answer: d

Diff: 2

Type: MC

Page Reference: 47–48

Skill: Applied

Objective: Apply the terms and concepts of experimental methods to research examples.

58) Dr. Potter, an English professor, is curious about his students' attitudes toward one of his favourite books. What research method is he most likely to use to gather this information?

- a. case study
- b. survey
- c. experiment
- d. correlational

*Correct: The survey method is generally the most appropriate when we are interested in people's attitudes or opinions. A case study would only tell the professor about a single student's*

*attitudes, and correlational and experimental designs are used to study the relationships between two or more variables.*

Answer: b

Diff: 2

Type: MC

Page Reference: 48

Skill: Applied

Objective: Apply the terms and concepts of experimental methods to research examples.

59) If you are interested in examining the relationship between the number of class days missed and one's subsequent semester grade point average, you would be best served to use a(n) \_\_\_\_\_ to study this relationship.

- a. case study design
- b. correlational design
- c. experimental design
- d. naturalistic observation design

*Correct: Correlational research involves measuring the degree of association between two or more variables. In this example, the goal is to find the correlation between days missed and grade point average. Experimental designs can also be used to find relationships between variables, but are more complicated and they are generally only used when the goal of the research is to find cause-and-effect relationships.*

Answer: b

Diff: 2

Type: MC

Page Reference: 49

Skill: Applied

Objective: Apply the terms and concepts of experimental methods to research examples.

- 60) Two variables are said to have a correlation when scores on one variable
- a. are unrelated to the scores on the second variable.
  - b. are related to scores on the second variable.
  - c. cause the scores on the second variable.
  - d. are different from the scores on the second variable.

*Correct: When two variables are related so that the value of the first variable is associated with the value of the second, the two variables are said to be correlated. This does not necessarily mean that the first variable causes the value of the second variable—an important concept in correlational research is that correlation is a measure of association, not a measure of causality.*

Answer: b

Diff: 1

Type: MC

Page Reference: 49–50

Skill: Factual

Objective: Understand what it means when variables are positively or negatively correlated.

- 61) Which of these is a type of correlation discussed in your text?
- a. normal
  - b. parallel
  - c. skewed
  - d. negative

*Correct: Correlations are usually classified as either positive or negative, depending on whether the two variables change in the same direction (positive), or are inversely related (negative).*

Answer: d

Diff: 1

Type: MC

Page Reference: 49–50

Skill: Factual

Objective: Understand what it means when variables are positively or negatively correlated.

62) As the average daily temperature in Edmonton, Alberta, *decreases* the number of persons who are observed wearing sweaters in the workplace *increases*. This is an example of a(n) \_\_\_\_\_ correlation.

- a. illusory
- b. negative
- c. positive
- d. zero

Correct: *When an increase in one variable is associated with a decrease in another (or vice versa) the two variables are said to be negatively correlated.*

Answer: b

Diff: 2

Type: MC

Page Reference: 49–50

Skill: Applied

Objective: Understand what it means when variables are positively or negatively correlated.

63) One hopes that the amount of time a student spends studying would show a(n) \_\_\_\_\_ correlation with the student's grades.

- a. negative
- b. zero

- c. positive
- d. illusory

*Correct: When two variables are positively correlated, an increase in the first variable is associated with an increase in the second variable. In this example, an increase in studying should be associated with an increase in grade.*

Answer: c

Diff: 2

Type: MC

Page Reference: 49–50

Skill: Applied

Objective: Understand what it means when variables are positively or negatively correlated.

64) There is a negative correlation between wearing one's seat belt and the severity of injuries received during an accident. Which statement correctly illustrates this correlation?

- a. The more often you wear your seat belt, the more serious the injury you are likely to receive in an accident.
- b. The more you wear your seat belt, the less likely you are to suffer serious injuries in an accident.
- c. Wearing your seatbelt prevents you from being injured in an accident.
- d. Failing to wear your seat belt increases the likelihood that you will sustain serious injuries in an accident.

*Correct: A negative correlation means that as one variable increases the other decreases. In this example, the more you wear your seatbelt the less likely you are to be injured. At first, this may seem the same as saying "wearing seatbelts prevents injury" or "failing to wear seatbelts increases injury," however, these are statements of causality, not simply correlation. A negative correlation between seatbelt wearing and injury could be the result of safe driving habits (i.e., safe drivers are more likely to wear their seatbelts and also be involved in less serious accidents).*

Answer: b

Diff: 3

Type: MC

Page Reference: 49–50

Skill: Applied

Objective: Understand what it means when variables are positively or negatively correlated.

65) A graph that can be used to represent the pattern of relationship between scores from two variables is called a \_\_\_\_\_.

- a. bar graph
- b. frequency polygon
- c. histogram
- d. scatterplot

*Correct: Relationships between two variables (i.e., correlations) can be visualized when presented in a graph called a scatterplot. The other types of graphs listed are not used to visualize correlations.*

Answer: d

Diff: 1

Type: MC

Page Reference: 49

Skill: Factual

Objective: Know the key terminology related to research designs.

66) Dr. Schott's scatterplot reveals no real patterns or clusters. In fact, the data seems to fall randomly on the graph. This pattern of results is most likely from which type of correlation?

- a. positive

- b. zero
- c. negative
- d. skewed

*Correct: When the dots on a scatterplot do not follow any discernable pattern, it indicates that the correlation between the two variables is close to zero.*

Answer: b

Diff: 2

Type: MC

Page Reference: 49–50

Skill: Applied

Objective: Understand what it means when variables are positively or negatively correlated.

67) Dr. Stanhope is trying to determine which type of correlation is represented on his scatterplot, in which nearly all of his data are clustered along a diagonal line running from higher numbers on the left down to lower numbers on the right. Which type of correlation is represented by this pattern?

- a. positive
- b. zero
- c. negative
- d. We need more information to draw a conclusion.

*Correct: When the dots on a scatterplot show a pattern that is slanted downward to the right, it indicates that there is a negative correlation between the two variables.*

Answer: c

Diff: 2

Type: MC

Page Reference: 49–50

Skill: Applied

Objective: Understand what it means when variables are positively or negatively correlated.

68) Mr. Jones, a sixth-grade science teacher, has tried to predict his students' end-of-the-year grades by looking at their grades from the previous year. Unfortunately, there does not seem to be any systematic relationship between these two variables. The correlation between these two variables is probably \_\_\_\_\_.

- a. near zero
- b. positive
- c. negative
- d. near 1.0

Correct: *If there is little to no pattern in the relationship between two variables, the correlation coefficient will be close to zero.*

Answer: a

Diff: 2

Type: MC

Page Reference: 49–50

Skill: Applied

Objective: Understand what it means when variables are positively or negatively correlated.

69) Which correlation coefficient is most likely to describe the relationship between brushing one's teeth and the number of cavities one gets?

- a.  $-.62$
- b.  $+.83$
- c.  $-.08$
- d.  $+.45$

Correct: *Because better dental hygiene is associated with fewer cavities, the correlation between the two variables should be fairly strong and negative.  $-.08$  is a very weak negative correlation, making  $-.62$  the most likely answer.*

Answer: a

Diff: 2

Type: MC

Page Reference: 49–50

Skill: Applied

Objective: Understand what it means when variables are positively or negatively correlated.

70) A correlation coefficient will always range between:

- a. 0 and 1.
- b.  $-10$  and  $+10$ .
- c. 0 percent and 100 percent.
- d.  $-1.0$  and  $+1.0$ .

Correct: *Correlation coefficients can range from  $-1.0$  to  $+1.0$ , with  $-1.0$  being a perfect negative correlation,  $+1.0$  a perfect positive correlation, and 0 being no correlation.*

Answer: d

Diff: 2

Type: MC

Page Reference: 50

Skill: Factual

Objective: Understand what it means when variables are positively or negatively correlated.

71) Which of the following correlations represents the weakest degree of relation between two variables?

- a. Daily calcium intake and bone mass density, correlation coefficient =  $+0.11$
- b. Degree of exposure to lead and IQ scores in children, correlation coefficient =  $-0.12$
- c. Hours of exposure to media violence and aggressive behaviour, correlation coefficient =  $+0.31$
- d. Number of cigarettes smoked per day and incidence of lung cancer, correlation coefficient =  $+0.39$

Correct: *The magnitude or strength of a correlation coefficient is indicated by its absolute value. The closer to an absolute value of 1, the stronger the correlation. While it may at first seem that  $-0.12$  is weaker than  $+0.11$ , the absolute value of  $0.11$  is less than  $0.12$ .*

Answer: a

Diff: 2

Type: MC

Page Reference: 50

Skill: Applied

Objective: Understand what it means when variables are positively or negatively correlated.

72) Which of the following correlation coefficients represents the strongest degree of relation between two variables?

- a.  $+0.19$
- b.  $-0.25$
- c.  $+0.43$
- d.  $-0.47$

Correct: *The magnitude or strength of a correlation coefficient is indicated by its absolute value. The closer to an absolute value of 1, the stronger the correlation. While it may at first seem that  $+0.43$  is stronger than  $-0.47$ , the absolute value of  $0.43$  is less than  $0.47$ .*

Answer: d

Diff: 2

Type: MC

Page Reference: 50

Skill: Conceptual

Objective: Understand what it means when variables are positively or negatively correlated.

73) Correlational research designs are NOT appropriate for purposes of \_\_\_\_\_.

- a. causation
- b. description
- c. prediction
- d. describing relationships

*Correct: Because correlations are measures of association and not causality, correlational research cannot be used to determine cause-and-effect relationships. Correlational research is good, however, for finding and describing relationships, and can allow researchers to make predictions about one variable based on its correlation with a second variable.*

Answer: a

Diff: 2

Type: MC

Page Reference: 49–50

Skill: Factual

Objective: Analyze the pros and cons of descriptive, correlational, and experimental research designs

74) The perception of a statistical association between two variables where none exists is known as \_\_\_\_\_.

- a. confirmation bias

- b. illusory correlation
- c. existence proof
- d. type II error

Correct: *Illusory correlations are relationships that really only exist in the mind, rather than reality.*

Answer: b

Diff: 1

Type: MC

Page Reference: 50

Skill: Factual

Objective: Know the key terminology related to research designs.

75) When asked if there are more ice cream cones sold in November or July, Mary answers "July" immediately. She is surprised to find out that there is little to no difference between the two months in terms of ice-cream-cone sales. Mary's error is most clearly an example of \_\_\_\_\_.

- a. imaginary correlation
- b. common sense
- c. superstitions
- d. illusory correlation

Correct: *Illusory correlations are relationships that really only exist in the mind, rather than reality.*

Answer: d

Diff: 2

Type: MC

Page Reference: 50

Skill: Applied

Objective: Know the key terminology related to research designs.

76) The only research design that allows one to make inferences on cause- effect is the \_\_\_\_\_ design.

- a. case study
- b. correlational
- c. experimental
- d. naturalistic observation

*Correct: It is the manipulation of variables along with random assignment that allows an experiment to make cause-and-effect conclusions. The other research methods listed do not permit causal inferences.*

Answer: c

Diff: 2

Type: MC

Page Reference: 51

Skill: Factual

Objective: Understand how experiments help demonstrate cause-and-effect relationships.

77) What is the main difference between an experiment and a correlational study?

- a. A correlational study involves the manipulation of variables, while an experiment does not.
- b. An experiment uses random sampling, while a correlational study uses random assignment.
- c. A correlational study looks at the relationship between independent and dependent variables, while an experiment looks at the relationship between confounding variables.
- d. An experiment involves the manipulation of variables, while a correlational study does not.

*Correct: It is the manipulation of variables along with random assignment that allows an experimenter to make cause-and-effect conclusions about the independent and dependent variables. Correlational studies do not involve specific independent and dependent variables, and do not involve manipulation or random assignment.*

Answer: d

Diff: 2

Type: MC

Page Reference: 51

Skill: Factual

Objective: Understand how experiments help demonstrate cause-and-effect relationships.

78) One key aspect of an experiment that is missing in other research designs is

- a. the ability to test predictions.
- b. the use of variables.
- c. the use of operational definitions.
- d. random assignment.

*Correct: All research methods generally use variables, operational definitions, and can be used to test predictions made by theories. The experimental method, however, is the only type of research that involves random assignment.*

Answer: d

Diff: 2

Type: MC

Page Reference: 51

Skill: Factual

Objective: Understand how experiments help demonstrate cause-and-effect relationships.

79) A research design characterized by random assignment of participants to conditions and manipulation of an independent variable is called a(n) \_\_\_\_\_.

- a. case study
- b. naturalistic observation
- c. experiment
- d. survey

*Correct: The experimental method is the only type of research that involves random assignment and the manipulation of one or more independent variables.*

Answer: c

Diff: 1

Type: MC

Page Reference: 51

Skill: Factual

Objective: Understand how experiments help demonstrate cause-and-effect relationships.

80) Professor Golder is studying hyperactivity in preschool-age children. She is concerned that differences in child rearing, diet, and so forth may affect her results. To minimize these potential preexisting variables, she should be sure to do which of the following?

- a. Use random assignment when forming her groups.
- b. Include an independent variable.
- c. Include a dependent variable.
- d. Assign boys to the experimental group and girls to the control group.

*Correct: In an experiment, it is the random assignment of participants to different groups that insures that the groups are roughly equal. This is important, because without random assignment, preexisting differences between participants could act as confounding variables and end up affecting the results. While the independent and dependent variables are also an important part of the experimental method, they do not help to control for preexisting variables.*

Answer: a

Diff: 3

Type: MC

Page Reference: 51–52

Skill: Applied

Objective: Apply the terms and concepts of experimental methods to research examples.

81) Why is it important to make sure that different participant groups are roughly equivalent in terms of personal characteristics (e.g., age, gender) before any independent variable is introduced?

- a. It is important to treat all research participants equally so that they feel that they are not being manipulated.
- b. Research ethics forbid any experiment to take place when the participant groups are fundamentally different from each other.
- c. It is important so that no major differences between the groups unduly bias the results of the experiment.
- d. This is generally what happens when participants are allowed to choose their own groups.

*Correct: When the groups are different before the research begins, any changes in the dependent variable might be caused by those differences (which are called confounding variables). This problem is usually avoided by using random assignment.*

Answer: c

Diff: 2

Type: MC

Page Reference: 51–52

Skill: Conceptual

Objective: Understand how experiments help demonstrate cause-and-effect relationships.

82) The \_\_\_\_\_ variable is what the experimenter manipulates (or varies).

- a. control
- b. dependent
- c. operational
- d. independent

*Correct: In an experiment, the independent variable is the variable that the experimenter manipulates to distinguish between the different groups. This is in contrast with the dependent variable, which is manipulated as part of the experiment and data from the different dependent variable groups are compared. The goal of an experiment is to determine if manipulating the independent variable affects the dependent variable.*

Answer: d

Diff: 1

Type: MC

Page Reference: 52

Skill: Factual

Objective: Know the key terminology related to research designs.

83) The variable that an experimenter assesses or measures is called the \_\_\_\_\_.

- a. causal variable
- b. confounding variable
- c. dependent variable
- d. independent variable

*Correct: In an experiment, the dependent variable is the observation or measurement that is recorded during the experiment and subsequently compared across all groups. This is in contrast with the independent variable, which is the variable that the experimenter manipulates to distinguish between the different groups. The goal of an experiment is to determine if manipulating the independent variable affects the dependent variable.*

Answer: c

Diff: 1

Type: MC

Page Reference: 52

Skill: Factual

Objective: Know the key terminology related to research designs.

84) An administrator believes that the placement of motivational posters on the walls in classrooms of academic buildings will lead to increased GPAs (grade point averages) at his school. To test his theory, he randomly assigns certain classrooms within the university's Faculty of Science to have the posters while others do not. None of the remaining four faculties will have any posters placed in their classrooms. What is the independent variable in this study?

- a. faculties
- b. classroom posters
- c. gender of the student
- d. grade point average

*Correct: In an experiment, the independent variable is the variable that the experimenter manipulates to distinguish between the different groups. The dependent variable is the variable which is measured and subsequently compared across all groups. The goal of an experiment is to determine if manipulating the independent variable affects the dependent variable. In this example, the goal is to determine if manipulating the posters affects the GPA scores.*

Answer: b

Diff: 3

Type: MC

Page Reference: 52

Skill: Applied

Objective: Apply the terms and concepts of experimental methods to research examples.

85) A medical doctor believes that the presence of aromatherapy candles will reduce the anxiety of first-time mothers-to-be during labour and will increase their reported satisfaction with their care at his hospital. He randomly assigns mothers to give birth in a room either with or without aromatherapy candles. What is the independent variable in this example?

- a. anxiety level during labour
- b. number of previous birthing experiences
- c. room environment
- d. satisfaction with hospital care

*Correct: In an experiment, the independent variable is the variable that the experimenter manipulates to distinguish between the different groups. The dependent variable is the variable which is measured and subsequently compared across all groups. The goal of an experiment is to determine if manipulating the independent variable affects the dependent variable. In this example, the goal is to determine if manipulating the room environment with candles will affect the two dependent variables: anxiety and satisfaction with care.*

Answer: c

Diff: 3

Type: MC

Page Reference: 52

Skill: Applied

Objective: Apply the terms and concepts of experimental methods to research examples.

86) Professor Todd decides to test her hypothesis that eating chocolate prior to exams increases students' test scores. She randomly assigns students to two groups at the beginning of the semester. One group receives a bar of chocolate before each test, while the other group receives another type of candy. She compares their scores at the end of the year, and finds that the students who ate the chocolate scored an average of ten points higher on their exams. What is the dependent variable in this experiment?

- a. students' test scores

- b. chocolate bars
- c. the students themselves
- d. the professor

*Correct: In an experiment, the independent variable is the variable that the experimenter manipulates to distinguish between the different groups. The dependent variable is the variable which is measured and subsequently compared across all groups. The goal of an experiment is to determine if manipulating the independent variable affects the dependent variable. In this example, the goal is to determine if manipulating what students eat before an exam affects their performance.*

Answer: a

Diff: 2

Type: MC

Page Reference: 52

Skill: Applied

Objective: Apply the terms and concepts of experimental methods to research examples.

87) Professor Todd decides to test her hypothesis that eating chocolate prior to exams increases students' test scores. She randomly assigns students to two groups at the beginning of the semester. One group receives a bar of chocolate before each test, while the other group receives another type of candy. She compares their scores at the end of the year, and finds that the students who ate the chocolate scored an average of ten points higher on their exams. What is a fair conclusion that can be drawn from this experiment?

- a. Eating chocolate causes students' test scores to increase.
- b. Eating chocolate has no relationship to students' test scores.
- c. Eating chocolate may increase students' satisfaction with the class.
- d. Eating chocolate makes students happy.

*Correct: An experiment with random assignment to groups allows researchers to determine cause and effect between the independent and dependent variables. In this example, because the dependent variable was the students' test scores, it can be concluded that eating chocolate*

*increased the test scores. While the chocolate may have also affected the students' satisfaction and happiness, this cannot be concluded based on the experiment's design.*

Answer: a

Diff: 1

Type: MC

Page Reference: 52

Skill: Applied

Objective: Apply terms and concepts of experimental methods to research examples.

88) In an experiment, a researcher wants to avoid the presence of \_\_\_\_\_.

- a. confounding variables
- b. dependent variables
- c. independent variables
- d. random assignment

*Correct: Confounding variables are variables outside of the researcher's control that might affect the results. In an experiment, it is important to avoid or control for confounding variables because they can make it difficult to determine if the independent variable is really affecting the dependent variable or not.*

Answer: a

Diff: 1

Type: MC

Page Reference: 52

Skill: Factual

Objective: Know the key terminology related to research designs.

89) In an experiment, the \_\_\_\_\_ group receives no manipulation.

- a. control
- b. dependent
- c. independent
- d. experimental

*Correct: A control group is the group that does not receive the treatment and therefore serves as a comparison for the experimental group(s).*

Answer: a

Diff: 1

Type: MC

Page Reference: 52

Skill: Factual

Objective: Know the key terminology related to research designs.

90) A researcher wants to see whether she can make the typical administrative assistant job more motivating at Acme, Inc. To experimentally investigate this possibility, she randomly assigns administrative assistants to one of the following conditions: doing the job as it has always been done, having a computer performance monitoring device installed, receiving feedback about their performance on a weekly basis, or being given a say in how one's workload is structured and done. Which of the preceding conditions is an example of a control group?

- a. being given a say in how one's workload is structured and done
- b. doing the job as it has always been done
- c. having a computer performance monitoring device installed
- d. receiving feedback on a weekly basis

*Correct: A control group is the group that does not receive the treatment and therefore serves as a comparison for the experimental group(s).*

Answer: b

Diff: 2

Type: MC

Page Reference: 52

Skill: Applied

Objective: Apply the terms and concepts of experimental methods to research examples.

91) Ryan, a professional bass fisherman, is trying to determine which lure is most effective on Wakeby Lake: the plastic worm he normally uses or the new minnow-style lure he bought yesterday. Based on this scenario, what would constitute the control?

- a. the new minnow lure
- b. the plastic worm
- c. both the minnow lure and the plastic worm
- d. there is no control

*Correct: A control group is the group that does not receive the treatment and therefore serves as a comparison for the experimental group(s). In this example, Ryan normally uses the plastic worm, so this will act as a baseline to compare with the new lure he is "experimenting" with on the lake.*

Answer: b

Diff: 2

Type: MC

Page Reference: 52

Skill: Applied

Objective: Apply the terms and concepts of experimental methods to research examples.

92) Dr. Johansen randomly assigned subjects to three different groups during her last experiment. She then proceeded to give all the participants in the experiment a new study

technique designed to enhance their learning for the upcoming test. What critical error did she make during her experiment?

- a. She failed to identify the independent variable.
- b. She failed to identify the dependent variable.
- c. She failed to include an experimental group.
- d. She failed to include a control group.

*Correct: A control group is the group that does not receive the treatment and therefore serves as a comparison for the experimental group(s). In this example, by giving all of the participants the new study technique, Dr. Johansen will not have a control group to compare to the subjects with the new technique. While the independent and dependent variables were not explicitly stated in the example, they are clearly the new study technique and the exam performance, respectively.*

Answer: d

Diff: 2

Type: MC

Page Reference: 52

Skill: Applied

Objective: Apply the terms and concepts of experimental methods to research examples.

93) The group that receives the manipulation of an independent variable is called the \_\_\_\_\_.

- a. control group
- b. dependent group
- c. experimental group.
- d. independent group

*Correct: The experimental group is the group in the experiment that is exposed to the independent variable. This is in contrast to the control group, which receives no manipulation.*

Answer: c

Diff: 1

Type: MC

Page Reference: 52

Skill: Factual

Objective: Know the key terminology related to research designs.

94) Quasi-experimental designs are similar to true experimental designs, except for what difference?

- a. random assignment is not possible
- b. there is more than one independent variable
- c. there is more than one dependent variable
- d. there is no dependent variable

Correct: *Quasi-experimental research is a research technique in which the two or more groups that are compared are selected based on pre-determined characteristics, not random assignment.*

Answer: a

Diff: 2

Type: MC

Page Reference: 52

Skill: Factual

Objective: Know the key terminology related to research designs.

95) If researchers wanted to study the effect of various factors on reaction time, which factor would require the researchers to use a quasi-experimental design instead of an experimental design?

- a. alcohol

- b. sleep deprivation
- c. gender
- d. caffeine

Correct: *Quasi-experimental designs are used when the groups that are compared are selected based on pre-determined characteristics and random assignment cannot be used. In this example, participants could be randomly assigned to an experimental group that receives caffeine, alcohol, or is deprived of sleep. However, it is not possible to randomly assign participants to be male or female.*

Answer: c

Diff: 3

Type: MC

Page Reference: 52

Skill: Conceptual

Objective: Know the key terminology related to research designs.

96) The MKUltra project is often cited as an example of

- a. unethical research on animals.
- b. unethical research on human beings.
- c. why it is sometimes necessary to deceive participants.
- d. why REBs sometimes cause more harm than good.

Correct: *These studies of brainwashing and torture often had very negative effects on the participants. MKUltra was officially ended in 1973.*

Answer: b

Diff: 2

Type: MC

Page Reference: 55

Skill: Factual

Objective: Apply the ethical principles of scientific research to examples.

97) What is the purpose of a research ethics board?

- a. to help protect research participants from abuse
- b. to hinder the research process by placing unnecessary hurdles in the way of researchers
- c. to help protect the university from lawsuits from unhappy research participants
- d. to encourage the use of deception in medical and psychological research with humans

*Correct: A research ethics board (REB) is a committee of researchers and officials charged with the protection of human research participants at an institution. The REB is intended to protect individuals in two main ways: (1) the committee weighs potential risks to the volunteers against the possible benefits of the research, and (2) it requires that volunteers agree to participate in the research.*

Answer: a

Diff: 2

Type: MC

Page Reference: 56

Skill: Factual

Objective: Know the key terminology of research ethics.

98) Kendra serves on a committee whose job is to review proposed psychology studies. The committee refuses to approve one study because it feels the possible benefit from the research is too little given the potential risk to the participants. Kendra's committee is most accurately called an \_\_\_\_\_.

- a. ethics commission
- b. inquisition
- c. academic safety advisory committee

d. research ethics board

*Correct: A research ethics board (REB) is a committee of researchers and officials charged with the protection of human research participants at an institution. The REB is intended to protect individuals in two main ways: (1) the committee weighs potential risks to the volunteers against the possible benefits of the research, and (2) it requires that volunteers agree to participate in the research.*

Answer: d

Diff: 2

Type: MC

Page Reference: 56

Skill: Applied

Objective: Know the key terminology of research ethics.

99) Which of the following is true about studies that potentially increase mortality salience in participants?

- a. Mortality salience is classified as a physical risk.
- b. Studies that increase mortality salience are unethical.
- c. Stress from mortality salience is typically short term and can be an acceptable risk.
- d. Studies that increase mortality salience are always acceptable.

*Correct: Making subjects more aware of death (mortality salience) is sometimes a side effect of measures used in psychological research. While it can cause psychological stress, this tends to be short term. Therefore, the benefits of a study must be weighed against the risk to participants.*

Answer: c

Diff: 2

Type: MC

Page Reference: 56

Skill: Conceptual

Objective: Know the key terminology of research ethics.

100) What is informed consent?

- a. Volunteers agree to participate in a study after the purpose, tasks, and risks of the study are explained to them.
- b. REBs must be informed about the purpose, tasks, and risks of a study before they approve it.
- c. Researchers agree to be legally responsible for the physical and psychological safety of their participants.
- d. Participants must be informed of the results of the study they participated in and give their consent before the research is published.

*Correct: Current research practice uses the concept of informed consent: A potential volunteer must be informed (know the purpose, tasks, and risks involved in the study) and give consent (agree to participate based on the information provided) without pressure.*

Answer: a

Diff: 2

Type: MC

Page Reference: 55

Skill: Conceptual

Objective: Know the key terminology of research ethics.

101) Which of these is an essential concern regarding ethical principles for human research?

- a. Research participants must give informed consent.
- b. Research participants must be deceived so that they do not know the true nature of the research to which they are contributing.
- c. Research participants must be paid for their contribution.
- d. As long as informed consent has been given, research participants may be subjected to any level of physical or psychological pain or discomfort.

*Correct: Participants in psychological research must give informed consent (i.e., they must be told about the purpose, tasks, and any risks, and then consent to participate). This does not mean that informed consent allows researchers to do anything they want.*

Answer: a

Diff: 2

Type: MC

Page Reference: 57–58

Skill: Conceptual

Objective: Know the key terminology of research ethics.

102) What effect does the planned use of deception have on the approval of a study?

- a. Studies with deception can be approved, but only if the deception is necessary and the risk to participants is minimal.
- b. The use of deception has no effect on the likelihood the study will be approved.
- c. Studies that involve deception go through a different approval process.
- d. Studies with deception are never approved.

*Correct: Deception can have serious consequences for participants. However, researchers can use deception under most circumstances when it is necessary.*

Answer: a

Diff: 2

Type: MC

Page Reference: 57

Skill: Factual

Objective: Analyze the role of using deception in psychological research.

103) Professor Wagner is explaining to his subjects the purpose behind the experiment they just participated in, along with a general description of the results. He is engaging in what aspect of a research study?

- a. debriefing
- b. informed consent
- c. institutional review
- d. deception

*Correct: After participating in a study, subjects undergo a full debriefing, in which the researchers explain the true nature of the study, and especially the nature of and reason for any deception. In contrast, informed consent must be obtained prior to participation.*

Answer: a

Diff: 1

Type: MC

Page Reference: 58

Skill: Applied

Objective: Know the key terminology of research ethics.

104) Participants in modern psychology experiments are given the right to

- a. choose which treatment group they are in.
- b. with hold responses to questions they feel uncomfortable answering.
- c. review the results of the study before they are published.
- d. write a formal response to the published paper.

*Correct: Volunteers have the right to withdraw from the study, at any time, without penalty. The right to give informed consent stays with the participants throughout the entire study.*

Answer: b

Diff: 2

Type: MC

Page Reference: 58

Skill: Factual

Objective: Apply the ethical principles of scientific research to examples.

105) Confidentiality requires researchers to do which of the following?

- a. Provide complete anonymity when collecting data.
- b. Erase all confidential data as soon as the results of the study are published.
- c. Use a double-blind procedure.
- d. Remove any specific information that can be connected with a participant when sharing data.

*Correct: Researchers cannot always guarantee complete anonymity when collecting data, but they must at least provide confidentiality. There are at least two parts to confidentiality. First, researchers cannot share specific data or observations that can be connected with an individual. Second, all records must be kept securely (for example, in a password-protected database or locked filing cabinet) so that identities cannot be revealed unintentionally. These records should be kept for a reasonable amount of time, even after the study has been published.*

Answer: d

Diff: 3

Type: MC

Page Reference: 58

Skill: Conceptual

Objective: Apply the ethical principles of scientific research to examples.

106) Dr. Nolen wants to know the effects of removing portions of one's hippocampi on long-term memory, in the hopes of one day finding a cure for patients with Alzheimer's disease. The subjects for his study are most likely to be \_\_\_\_\_.

- a. humans

- b. nonhuman animals
- c. robots
- d. insects

*Correct: Some research cannot ethically be conducted on humans, so nonhuman animals (most often mice or rats) are used instead. When researching human diseases, the closer the animal is to humans, the more likely it is that the results will generalize to people.*

Answer: b

Diff: 1

Type: MC

Page Reference: 58–59

Skill: Applied

Objective: Understand why animals are often used in scientific research.

107) According to your text, which of the following is true of the use of animal research in psychology?

- a. Animal research is important for several reasons, but it requires attention to many of the same ethical issues that apply to human research.
- b. All animal research must be ended as soon as is possible because it is generally cruel.
- c. Animal research is misguided because psychology is the study of human behaviour.
- d. Animal research is useful because risk and discomfort to non-human subjects do not need to be addressed.

*Correct: There are several reasons to use non-human subjects in psychology research, especially when a procedure would be unethical on humans. However, many of the same ethical considerations for human research also apply to animal research, including the importance of minimizing unnecessary risk and discomfort.*

Answer: a

Diff: 2

Type: MC

Page Reference: 58–59

Skill: Conceptual

Objective: Understand why animals are often used in scientific research.

108) Which of the following is an advantage of using non-human subjects in psychology research?

- a. Research on non-humans does not have to be reviewed by ethics committees.
- b. Many lab animals have relatively short life spans, so several generations can be observed.
- c. Researchers do not have to justify risk and discomfort by the potential scientific value of the research.
- d. There are no advantages of animal research over human research.

*Correct: Genetic research requires species with much shorter life spans than our own so that several successive generations can be observed. Animal research is reviewed by committees for ethical treatment, which requires any risk or discomfort to be justified, just as it is for human subjects.*

Answer: b

Diff: 2

Type: MC

Page Reference: 58–59

Skill: Conceptual

Objective: Understand why animals are often used in scientific research.

109) In general, what should researchers do with data after the results of a study have been published?

- a. Destroy it immediately.

- b. Keep it forever.
- c. Keep it secure for around 25 to 50 years.
- d. Keep it secure for around 3 to 5 years.

*Correct: Once data are reported in a journal or at a conference, they should be kept for a reasonable amount of time—generally, three to five years is acceptable. The purpose for keeping data relates to the public nature of good research. Other researchers may request access to the data to re-interpret it, or perhaps examine it before doing a replication.*

Answer: d

Diff: 2

Type: MC

Page Reference: 61

Skill: Factual

Objective: Understand the importance of reporting and storing data.

110) \_\_\_\_\_ are a set of techniques used to organize, summarize, and interpret data.

- a. Central tendencies
- b. Inferential statistics
- c. Distributions
- d. Descriptive statistics

*Correct: Descriptive statistics are mathematical tools used primarily to organize and summarize data. While central tendency is a type of descriptive statistic, measures of central tendency only describe the central point of a distribution.*

Answer: d

Diff: 1

Type: MC

Page Reference: 65

Skill: Factual

Objective: Know the key terminology of statistics.

111) In order to organize and summarize a large set of data, use a set of mathematical techniques called

- a. hypothesis testing.
- b. inferential statistics.
- c. descriptive statistics.
- d. variability testing.

Correct: *Descriptive statistics are mathematical tools used primarily to organize and summarize data.*

Answer: c

Diff: 2

Type: MC

Page Reference: 65

Skill: Conceptual

Objective: Know the key terminology of statistics.

112) Which of the following is the correct description of *frequency*?

- a. the number of observations that fall within a certain category or range of scores
- b. a measure of how spread out values are within a distribution
- c. a measure of the central point of a distribution
- d. the distance between the highest and lowest value in a distribution

Correct: *Frequency simply indicates the number of instances of something. For example, if three students scored a 100% on a quiz, the frequency of perfect scores would be three.*

Answer: a

Diff: 2

Type: MC

Page Reference: 65

Skill: Factual

Objective: Know the key terminology of statistics.

113) What does the height of the bars on a histogram indicate?

- a. mean
- b. range
- c. frequency
- d. score or value

*Correct: Psychologists usually present data in a type of bar graph called a histogram. Like other bar graphs, the vertical axis shows the frequency, or the number of observations that fall within a certain category or range of scores.*

Answer: c

Diff: 2

Type: MC

Page Reference: 65

Skill: Factual

Objective: Apply your knowledge to interpret the most frequently used types of graphs.

114) The scores on most standardized tests have a \_\_\_\_\_ distribution.

- a. normal
- b. positively skewed

c. negatively skewed

d. bimodal

*Correct: Many variables display in a normal distribution, such as the scores on most standardized tests or the average high temperature in Sault Ste. Marie, Ontario, throughout the month of January.*

Answer: a

Diff: 2

Type: MC

Page Reference: 65

Skill: Factual

Objective: Know the key terminology of statistics.

115) A teacher is disappointed to find that most of her students' test scores are clustered together at the low end of the grading scale, with only a few students having high grades. If she were to graph the distribution, what shape would it have?

a. normal

b. positively skewed

c. negatively skewed

d. central

*Correct: A positively skewed distribution occurs when the long tail is on the right of the cluster. In this example, the students would be clustered together on the left of the graph, with an increasingly smaller tail of "good" students trailing off to the right.*

Answer: b

Diff: 3

Type: MC

Page Reference: 65

Skill: Applied

Objective: Apply your knowledge to interpret the most frequently used types of graphs.

116) A frequency distribution with a cluster of scores and a long tail to its left is called a \_\_\_\_\_ distribution.

- a. negatively skewed
- b. positively skewed
- c. normal
- d. biased

*Correct: A negatively skewed distribution occurs when the curve has an extended tail to the left of the cluster.*

Answer: a

Diff: 2

Type: MC

Page Reference: 65

Skill: Factual

Objective: Know the key terminology of statistics.

117) Which of the following is a measure of central tendency?

- a. mode
- b. variability
- c. range
- d. standard deviation

*Correct: Mode, median, and mean are the three most commonly used measures of central tendency. Range and standard deviation are measures of variability.*

Answer: a

Diff: 1

Type: MC

Page Reference: 65–66

Skill: Factual

Objective: Know the key terminology of statistics.

118) A university president asks her psychology department chair if the university has more male or more female undergraduate psychology majors. What measure of central tendency is she asking about?

a. mean

b. median

c. mode

d. range

*Correct: The mode is the category with the highest frequency (that is, the category with the most observations). In this example, the mode would be whichever category (male or female) had the highest frequency. Range is not a measure of central tendency.*

Answer: c

Diff: 3

Type: MC

Page Reference: 66

Skill: Applied

Objective: Know the key terminology of statistics.

119) If a set of data has a normal distribution, which measure of central tendency should be used?

- a. mean
- b. median
- c. mode
- d. It doesn't matter; they will be the same.

Correct: *For normal distributions, the mean, median, and mode are always equal to each other.*

Answer: d

Diff: 2

Type: MC

Page Reference: 66

Skill: Factual

Objective: Analyze the choice of central tendency statistics based on the shape of the distribution.

120) If a set of data has a skewed distribution, which measure of central tendency should be used?

- a. mean
- b. median
- c. mode
- d. standard deviation

Correct: *When a distribution is skewed, the mean is pulled away from the centre. On the other hand, the median stays relatively stable, and so it is a better choice for describing central tendency when dealing with skewed data.*

Answer: b

Diff: 3

Type: MC

Page Reference: 66–67

Skill: Factual

Objective: Analyze the choice of central tendency statistics based on the shape of the distribution.

121) If all of the scores in a distribution are clustered closely together, the distribution has \_\_\_\_\_.

- a. low variability
- b. high variability
- c. a positive skew
- d. a negative skew

Correct: *Variability is the degree to which scores are dispersed in a distribution. The scores in a distribution with low variability cluster close together.*

Answer: a

Diff: 3

Type: MC

Page Reference: 67

Skill: Factual

Objective: Know the key terminology of statistics.

122) Conceptually, the standard deviation for a distribution can be thought of as

- a. the centre of the distribution.
- b. the average frequency for each category.
- c. the average distance from the mean.
- d. the distance between the highest and lowest values.

Correct: *The standard deviation is a measure of variability around the mean. It can be thought of as an estimate of the average distance from the mean.*

Answer: c

Diff: 2

Type: MC

Page Reference: 68

Skill: Conceptual

Objective: Know the key terminology of statistics.

123) Standard deviation is a measure of \_\_\_\_\_.

- a. central tendency
- b. variability
- c. statistical significance
- d. correlation

*Correct: The standard deviation is a measure of variability around the mean. It can be thought of as an estimate of the average distance from the mean.*

Answer: b

Diff: 1

Type: MC

Page Reference: 68

Skill: Factual

Objective: Know the key terminology of statistics.

124) Ada's professor tells her class that the average score on the last test was 72 points. Ada wants to know if most students actually scored near 72, or if the grades were more spread out, with many students doing much better or worse than a 72. What statistic could Ada ask her professor to calculate to help answer her question?

- a. standard deviation
- b. median
- c. mode
- d. correlation coefficient

Correct: *The standard deviation is a measure of variability around the mean. It can be thought of as an estimate of the average distance from the mean.*

Answer: a

Diff: 3

Type: MC

Page Reference: 68

Skill: Applied

Objective: Know the key terminology of statistics.

125) The term *statistical significance* implies that the results are \_\_\_\_\_.

- a. important
- b. extremely meaningful
- c. valid
- d. not likely due to chance

Correct: *In an experiment, statistical significance implies that the means of the groups are further apart than you would expect them to be by random chance alone. Therefore, the results are likely to be the same if the study were repeated again.*

Answer: d

Diff: 3

Type: MC

Page Reference: 70–71

Skill: Conceptual

Objective: Understand how and why psychologists use significance tests.

126) Dr. Kwan hypothesizes that allowing factory employees to listen to music while working will improve productivity. After conducting the experiment, Dr. Kwan finds that the group of participants who were allowed to listen to music was more productive than the group who did not, but this difference was not statistically significant. What should Dr. Kwan conclude about the difference between the two groups?

- a. It supports his hypothesis.
- b. He is likely to find the same effect if he replicated the study.
- c. There is an unacceptable chance that the difference is due to random chance.
- d. The experiment was biased.

*Correct: Statistical significance implies that the means of the groups are further apart than you would expect them to be by random chance alone. If a result is not statistically significant, then the difference between the groups is too likely to be due to random chance to support the hypothesis. This means that the results may not be able to be replicated.*

Answer: c

Diff: 3

Type: MC

Page Reference: 70–71

Skill: Applied

Objective: Analyze the conclusions that psychologists can make based on significance tests.

127) Researchers use \_\_\_\_\_ to determine whether the difference between groups is statistically significant.

- a. correlation coefficients
- b. descriptive statistics

c. hypothesis testing

d. vector analysis

*Correct: When researchers determine the significance of their results, they use a set of procedures called a hypothesis test, which measures the difference between the means of the two groups relative to the variability one would expect due to chance in the means (which is calculated based on the standard deviation and the size of the sample). The results of a hypothesis test will tell us if the two groups are significantly different (different because of the independent variable) with a certain degree of probability.*

Answer: c

Diff: 2

Type: MC

Page Reference: 69

Skill: Conceptual

Objective: Understand how and why psychologists use significance tests.

1) Good scientific research is based on measurements that are objective, valid, and reliable.

a. True

b. False

*Correct: Objective measurements are the foundation of the scientific method. In addition to objectivity, measurements should be valid (actually measure what they are supposed to measure), and reliable (provide consistent answers if remeasured).*

Answer: a

Page Reference: 32

2) If someone takes an intelligence test several times and receives the same score, the test has high validity.

a. True

b. False

*Correct: The test in the example has reliability, but not necessarily validity. Validity is the degree to which an instrument or procedure actually measures what it claims to measure. If the score the person keeps receiving does not reflect his or her actual intelligence, then the test has low validity.*

Answer: b

Page Reference: 32–34

3) Using random sampling increases the likelihood that the results from studying a sample will generalize to the population.

a. True

b. False

*Correct: In order for a sample to generalize to a population, psychologists prefer to use random sampling whenever possible.*

Answer: a

Page Reference: 35

4) In a double-blind experiment, neither the participant nor the researcher knows which treatment group the participant is in.

a. True

b. False

*Correct: Statement of fact.*

Answer: a

Page Reference: 39

5) Once the results of a study have been peer reviewed and published they are considered accurate, even if other researchers cannot replicate them.

a. True

b. False

*Correct: Replicating studies is an important component of the scientific method and helps to identify and correct flawed research. Results that cannot be replicated are eventually abandoned.*

Answer: b

Page Reference: 40

6) Surveys and questionnaires are used to collect self-report data.

a. True

b. False

*Correct: Surveys and questionnaires come in many different forms, but all of them rely on participants to speak for themselves and make their own observations.*

Answer: a

Page Reference: 48

7) A correlation of  $-0.80$  is a stronger relationship than a correlation of  $+0.50$ .

a. True

b. False

*Correct: The closer the absolute value of a correlation coefficient is to 1.0, the stronger the relationship. The positive and negative signs indicate the direction of the correlation, not its strength.*

Answer: a

Page Reference: 50

8) If a group of researchers find that the number of books fifth grade students read is positively correlated with their scores on an intelligence test, it would be correct to conclude that having children read more increases their intelligence.

a. True

b. False

*Correct: Correlation is not a measure of causality. Being intelligent might cause children to read more, or a third variable like parenting style might affect both intelligence and reading.*

Answer: b

Page Reference: 49–50

9) Pedro designs an experiment to test whether drinking a protein shake after weightlifting increases muscle development. The independent variable in his experiment is the protein shake.

a. True

b. False

*Correct: The independent variable is the variable that the experimenter manipulates to distinguish between the groups. In this experiment, one group of participants would receive the protein drink while the other would not. Pedro would then measure the muscle development (dependent variable) in each group to determine if the independent variable had an effect.*

Answer: a

Page Reference: 52

10) Asking participants to write about upsetting or traumatic experiences puts them at risk for cognitive and emotional stress.

a. True

b. False

*Correct: Physical risks are rare in psychological research. More common are measures that involve possible cognitive and emotional stress. While the amount of risk is most likely small, writing about upsetting or traumatic experiences can cause stress.*

Answer: a

Page Reference: 56

11) Researchers are not allowed to deceive participants about the purpose of the study.

a. True

b. False

*Correct: Sometimes it is necessary to use deception in psychological research. In these situations, the potential harm caused by the deception must be weighed against the potential benefits of the research.*

Answer: b

Page Reference: 57

12) The right to give informed consent stays with a volunteer throughout the entire study, and they should be able to withdraw at any point.

a. True

*Correct: This is one of the key elements of modern psychology research.*

b. False

Answer: a

Page Reference: 57–58

13) Researchers must give participants total anonymity.

- a. True
- b. False

*Correct: Anonymity means that the data collected during a research study cannot be connected to individual participants. Sometimes this is not possible. In these cases, confidentiality is a reasonable substitute.*

Answer: b

Page Reference: 58

14) For security and confidentiality reasons, once the results of a study are reported in a journal or at a conference, the data should be destroyed.

- a. True
- b. False

*Correct: Once data are reported in a journal or at a conference, they should be kept for a reasonable amount of time—generally, three to five years is acceptable. The purpose for keeping data relates to the public nature of good research. Other researchers may request access to the data to re-interpret it, or perhaps examine it before doing a replication.*

Answer: b

Page Reference: 61–62

15) A negatively skewed distribution has a long tail on the right of the cluster.

- a. True
- b. False

*Correct: A negatively skewed distribution occurs when the curve has an extended tail to the left of the cluster. If the tail is on the right, it is called a positively skewed distribution.*

Answer: b

Page Reference: 65

16) The mean, median, and mode are all measures of central tendency.

a. True

b. False

Correct: *Statement of fact.*

Answer: a

Page Reference: 65–66

17) When a distribution is skewed, the median is a better measure of the "average" than the mean.

a. True

b. False

Correct: *Because the mean is disproportionately affected by the few extreme scores in the tail, the median is considered a better measure of central tendency for skewed distributions.*

Answer: a

Page Reference: 67

18) If the distribution of quiz scores for a class has high variability, most of the students scored within a few points of each other.

a. True

b. False

Correct: *Variability is the degree to which scores are dispersed in a distribution. If the variability is high, the scores would be more spread out and less clustered.*

Answer: b

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19) If researchers find a statistically significant result, they would be likely to find the same result if they replicated the study again.

a. True

b. False

*Correct: Statistical significance implies that an observed difference between groups was unlikely to have occurred by random chance. Therefore, the same effect should almost always occur again if the experiment is replicated. In contrast, if an effect is not statistically significant, it may not be able to be replicated.*

Answer: a

Page Reference: 70–71