Name:_____ Class:_____ Date:_____

## Chapter 2—Scientific Methods in Psychology

1. The word *science* derives from a Latin word that means what?
   a. Laboratory
   b. Knowledge
   c. Questioning
   d. Progress

*ANSWER:* b

2. What is one way in which psychological research differs from chemistry and other sciences?
   a. Unlike psychologists, chemists use the experimental method.
   b. Unlike psychologists, chemists analyze their results with statistics.
   c. Psychological research faces more serious ethical restraints.
   d. Psychological experimentation dates back to the time of the ancient Greeks.

*ANSWER:* c

3. Any scientific study goes through four steps. Which of these is the correct order of events?
   a. Hypothesis-interpretation-methods-results
   b. Hypothesis-methods-interpretation-results
   c. Hypothesis-methods-results-interpretation
   d. Interpretation-hypothesis-methods-results

*ANSWER:* c

4. What is a hypothesis?
   a. A statistical test for determining the significance of a result
   b. A method of doing an experiment
   c. A statement that leads to a prediction
   d. An interpretation of the results of a study

*ANSWER:* c

5. When someone conducts a research study, which of these comes first?
   a. Interpretation
   b. Methods
   c. Hypothesis
   d. Results

*ANSWER:* c

6. What does it mean to say that a result is “replicable”?
   a. The results would be unlikely to arise by chance.
   b. The results conform to the predictions of a theory.
   c. Most scientists consider the results important.
   d. Other researchers can get the same results.

*ANSWER:* d

7. If other investigators repeat a study with similar results, what is the result said to be?
   a. Analytical

b. Redundant
c. Parsimonious
d. Replicable

*ANSWER:* d

8. If a result is replicable, which of these must be true?
a. Other investigators can repeat the results.
b. The interpretation is more parsimonious than other possible explanations.
c. The results have been published in a reputable journal.
d. The results are statistically significant.

*ANSWER:* a

9. How could someone determine whether the results of some study are replicable?
a. Survey other scientists for their opinions of the study.
b. Perform a statistical analysis to determine the likelihood of such results.
c. Compare the interpretation of results to other possible interpretations.
d. Repeat the procedure and try to get the same results.

*ANSWER:* d

10. If someone publishes surprising but incorrect results, in the long run people will not take the study seriously. Why not?
a. The interpretation will not be parsimonious.
b. The methods will not be explained in enough detail.
c. The hypothesis will not be plausible.
d. The results will not be replicable.

*ANSWER:* d

11. If researchers get similar results whenever they follow a procedure, what are the results?
a. Statistically significant
b. Parsimonious
c. Replicable
d. Experimental

*ANSWER:* c

12. If several researchers follow the same procedure as the first researcher but get different results, what do we say about those results?
a. They are not fictitious.
b. They are not replicable.
c. They are not parsimonious.
d. They are not statistically significant.

*ANSWER:* b

13. Which of these refers to the idea that we accept results only if other investigators can repeat them?
a. Significance

b. Replicability
c. Determinism
d. Parsimony

*ANSWER:* b

14. What does a meta-analysis do?
a. It re-examines the results of a controversial experiment.
b. It determines whether the interpretation of a result is parsimonious.
c. It removes from consideration any data that appear to be inaccurate.
d. It combines the results from many studies.

*ANSWER:* d

15. Suppose many researchers have conducted similar studies, but most used only a small number of participants. To estimate the true size of the results, which procedure would be best?
a. A correlation coefficient
b. A meta-analysis
c. A survey
d. A statement of parsimony

*ANSWER:* b

16. Suppose researchers are not certain about whether or not a certain finding is replicable. Which of these procedures would be appropriate for answering the question?
a. A meta-analysis
b. A standard deviation
c. A demand characteristic
d. A case history

*ANSWER:* a

17. A good scientific theory SHOULD have which of the following features?
a. It is based on many complex assumptions.
b. It makes falsifiable predictions.
c. It can agree with almost any observation.
d. It is based on illusory correlations.

*ANSWER:* b

18. What is meant by a "falsifiable" theory?
a. It is based on results that are not replicable.
b. Someone has reported evidence that contradicts the theory.
c. We can imagine evidence that would contradict the theory.
d. The theory disagrees with common sense.

*ANSWER:* c

19. If a theory is falsifiable, then which of the following is true?
a. It is too vague to be useful.

b. We can imagine evidence that would contradict it.
c. Scientists have replaced it with a better theory.
d. It makes interpretations that are not parsimonious.

*ANSWER:* b

20. Which of these is true about a "falsifiable" theory?
a. Most scientists argue against the theory.
b. Replicable data have contradicted the theory.
c. It makes clear, unambiguous predictions.
d. So far, not enough research has tested the theory.

*ANSWER:* c

21. Why is "falsifiable" considered a desirable thing for a theory?
a. It means we have replaced it with a better theory.
b. It means the theory is sufficiently interesting to attract opposition.
c. It means that the theory makes clear, testable predictions.
d. It means the theory is highly parsimonious.

*ANSWER:* c

22. If a theory is "falsifiable," then which of these is true about it?
a. More than one experiment has disconfirmed the theory.
b. It makes specific, testable predictions.
c. It contradicts other well-established theories.
d. It is based on too many unlikely assumptions.

*ANSWER:* b

23. Which of the following claims would NOT be falsifiable?
a. "Anxiety is more common in young adults than in old people."
b. "Mothers who take folic acid during pregnancy tend to have healthier children."
c. "Dreams are often disguised to hide their true meaning."
d. "Early music training improves children's language development."

*ANSWER:* c

24. A psychic claims that he can read the minds of people who lived thousands of years ago. What is the main scientific objection to this claim?
a. The claim is not based on mathematics.
b. The claim is based on correlational data.
c. The claim is not falsifiable.
d. The claim is based on independent variables.

*ANSWER:* c

25. Which of the following do researchers generally regard as desirable?
a. Experimenter bias
b. Demand characteristics

c. Falsifiable theories
d. Illusory correlations

*ANSWER:* c

26. The legal system requires the prosecution to demonstrate the defendant's guilt. Similarly, a scientist who makes a claim is expected to provide evidence. What is this obligation called?
a. Correlation
b. Burden of proof
c. Parsimony
d. Demand characteristic

*ANSWER:* b

27. In both science and the legal system, which side has the "burden of proof"?
a. The side that is defending the current point of view
b. The side that should find it possible to present convincing evidence, if it is right
c. The side that has more to lose, if it is wrong
d. The side that has fewer supporters

*ANSWER:* b

28. In science and in a criminal trial, who has the "burden of proof"—that is, the obligation to demonstrate that its claims are correct?
a. The side defending the more popular point of view
b. The side defending the more interesting theory
c. The side that should be able to produce good evidence, if they are right
d. The side that has more to lose

*ANSWER:* c

29. In both the U.S. legal system and in scientific disputes, the "burden of proof" falls on whom?
a. Someone who is proposing a more parsimonious explanation
b. Someone who is suspected of being dishonest
c. Someone who should be in the better position to provide convincing evidence
d. Someone who is defending the more popular beliefs or values

*ANSWER:* c

30. The "Yes-ists" claim there are intelligent beings somewhere in outer space. The "No-ists" claim there are not. Which side has the burden of proof, and why?
a. The Yes-ists have the burden of proof because they are defending the more popular point of view.
b. The Yes-ists have the burden of proof because they might be able to find evidence, and the No-ists could not.
c. The No-ists have the burden of proof because they are defending the more popular point of view.
d. The No-ists have the burden of proof because they might be able to find evidence, and the Yes-ists could not.

*ANSWER:* b

31. Some people believe in the existence of the "abominable snowman." Others doubt its existence. Who has the burden of proof, and why?
a. Those who believe in the abominable snowman have the burden of proof because they are defending the more

popular point of view.

b. Those who believe in the abominable snowman have the burden of proof because they might be able to find evidence, and the doubters could not.

c. Those who doubt the abominable snowman have the burden of proof because they are defending the more popular point of view.

d. Those who doubt the abominable snowman have the burden of proof because they might be able to find evidence, and the believers could not.

*ANSWER:* b

32. According to the principle of parsimony, what kind of theory should we prefer?

a. The theory for which we cannot even imagine any contradictory evidence

b. The theory that was proposed first

c. The theory that is most popular with the general public

d. The theory that makes fewer and simpler assumptions

*ANSWER:* d

33. What do we call the principle that we should prefer the theory that makes the fewest and simplest assumptions?

a. Informed consent

b. Parsimony

c. Falsifiability

d. Correlation

*ANSWER:* b

34. The professor says Angela missed class. Angela says she was there, but aliens from outer space caused her to be invisible. Why do we prefer the professor's account of the event?

a. It is more open-minded.

b. It is more parsimonious.

c. It is more correlational.

d. It is more psychoanalytic.

*ANSWER:* b

35. If a theory makes only a few simple assumptions similar to those of other widely accepted theories, what do we say about the new theory?

a. It is parsimonious.

b. It is inferential.

c. It is correlational.

d. It is replicable.

*ANSWER:* c

36. To decide whether a theory is parsimonious, what do scientists consider?

a. Whether or not the theory leads to practical applications

b. Whether or not the theory is popular with the general public

c. Whether or not the theory can be stated with mathematical precision

d. How simple the assumptions behind the theory are

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*ANSWER:* d

37. Why do scientists prefer the more parsimonious explanation?
    a. It is simpler.
    b. It is more interesting.
    c. It leads to getting better grant support.
    d. It avoids the burden of proof.

*ANSWER:* a

38. Suppose someone doing a card trick claims to read other people's minds though psychic powers. What would most scientists seek?
    a. A more sensational explanation
    b. A more parsimonious explanation
    c. A more correlational explanation
    d. A more psychoanalytic explanation

*ANSWER:* b

39. Clever Hans was a horse that at first appeared to have what surprising ability?
    a. Language comprehension
    b. Mind reading
    c. Mathematical calculation
    d. Disappearance

*ANSWER:* c

40. "Clever Hans" could answer math questions only under which conditions?
    a. Only if he had heard the same question before
    b. Only if his trainer was present
    c. Only if he could see the questioner's face
    d. Only if he could hear the questioner's voice

*ANSWER:* c

41. Clever Hans appeared to do math. But he was really responding to what?
    a. Finger movements
    b. Sounds
    c. Facial expressions
    d. Breathing patterns

*ANSWER:* c

42. When Clever Hans appeared to do complex math, why did scientists seek a different explanation?
    a. Scientists seek the most interesting explanation.
    b. Scientists seek the most parsimonious explanation.
    c. Scientists seek the most original explanation.
    d. Scientists seek the most psychoanalytic explanation.

*ANSWER:* b

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43. What was Oskar Pfungst's evidence that Clever Hans was not doing math?
    a. Hans's answers were only slightly more accurate than chance.
    b. Hans guessed randomly when scientists were present.
    c. Hans answered correctly only when his trainer, Mr. von Osten, was present.
    d. Hans answered correctly only if the questioner knew the correct answer.

*ANSWER:* d

44. What was Oskar Pfungst's evidence that Clever Hans was not doing math?
    a. Hans answered correctly only when the questioner made certain sounds.
    b. Hans answered correctly only when the questioner stood in plain sight.
    c. Hans answered correctly only when his trainer, Mr. von Osten, was present.
    d. Hans answered correctly on some days and not others.

*ANSWER:* b

45. How did Clever Hans solve arithmetic problems?
    a. He memorized the answer to each question by long practice.
    b. He watched the questioner for facial cues.
    c. He listened for the questioner to clear his throat.
    d. He guessed correctly only by accident.

*ANSWER:* b

46. In one word, why did most scientists doubt that Clever Hans could do complex mathematics, even before they understood he was actually doing?
    a. Correlation
    b. Maturation
    c. Parsimony
    d. Statistics

*ANSWER:* c

47. What do supporters of extrasensory perception assert?
    a. They assert that at least some people have an additional sense organ that perceives energies that other people do not perceive.
    b. They assert that all people have an additional sense organ that scientists don't know about.
    c. They assert that some people gain information without receiving anything through any sense organ.
    d. They assert that some people are luckier at guessing than other people are.

*ANSWER:* c

48. What is an anecdote?
    a. A way of testing the statistical significance of a result
    b. A participant in a research study
    c. A report of a single event
    d. A medicine that blocks the damage from a poison

*ANSWER:* c

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49. You think about a friend you haven't thought about in months, and then that friend calls you. This is an example of what?

a. A double-blind study
b. A demand characteristic
c. A statistically significant finding
d. An anecdote

*ANSWER:* d

50. Why is an anecdote NOT considered strong evidence?

a. Most people do not experience anecdotes.
b. When people do experience anecdotes, they don't remember them.
c. An anecdote is a demand characteristic.
d. An anecdote could have occurred by accident.

*ANSWER:* d

51. Why is an anecdote not considered strong evidence?

a. An anecdote is part of an experiment.
b. An anecdote is not replicable.
c. An anecdote is falsifiable.
d. An anecdote is observed in a double-blind manner.

*ANSWER:* b

52. "The Amazing Kreskin" demonstrates his powers by finding his paycheck hidden somewhere in the audience. What is the most parsimonious explanation?

a. He reads facial cues, much like Clever Hans.
b. He finds the check by coincidence alone.
c. He uses supernatural psychic powers.
d. He perceives brain waves radiating from the audience.

*ANSWER:* a

53. Someone claims that ESP shows up only when the vibrations are right and that there is no way to know whether the vibrations are right except to see whether ESP shows up. Why is this proposal not scientifically acceptable?

a. It is not falsifiable.
b. It has too many independent variables.
c. It has too many dependent variables.
d. It has no demand characteristics.

*ANSWER:* a

54. What is one of the main objections raised against ESP?

a. Not enough anecdotes have been reported.
b. The experiments claiming to support ESP have independent variables.
c. The results claiming to support ESP are not replicable.
d. The theory behind ESP is falsifiable.

*ANSWER:* c

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55. What are the reasons to be skeptical of extrasensory perception?
    a. The results are not replicable and the explanation is not parsimonious.
    b. The results are not independent and the explanation is not statistical.
    c. The results are not random and the explanation is not psychoanalytical.
    d. The results are not anecdotal and the explanation is not replicable.

*ANSWER:* a

56. What is an operational definition?
    a. A definition that states how to produce or measure something
    b. A definition in terms of synonyms and antonyms
    c. A definition that explains the scientific causes of something
    d. A definition that explains the origin of the word

*ANSWER:* a

57. Why do researchers use operational definitions of their terms?
    a. An operational definition enables researchers to measure something.
    b. An operational definition provides a scientific explanation of something.
    c. An operational definition explains the term to the average person.
    d. An operational definition explains the practical importance of something.

*ANSWER:* a

58. Which of the following is an operational definition of "grief"?
    a. A synonym for bereavement
    b. A feeling of sadness and loneliness
    c. The consequence of the loss of a loved one
    d. The number of tears shed per day

*ANSWER:* d

59. Which of the following is an operational definition of "hunger"?
    a. How much someone would be willing to pay for a meal
    b. A desire for food
    c. The opposite of "feeling full"
    d. The biological need for nutrition

*ANSWER:* a

60. Which of the following is an operational definition of "religiousness"?
    a. A belief in a supreme being
    b. The opposite of atheism
    c. The frequency of attending worship services
    d. A deep sense of oneness with the universe

*ANSWER:* c

61. Which of the following could be an operational definition of "love" of someone?
    a. Increase of heart rate upon seeing a picture of the person

b. A desire to be with the person whenever possible
c. A feeling of jealousy if someone else makes this person smile
d. The opposite of dislike or hate

*ANSWER:* a

62. Which of the following could be an operational definition of "love" of someone?
a. An extremely high regard for this person and desire for the person to be happy
b. A feeling of happiness when spending time with this person
c. How far you would be willing to walk through snow to get to this person
d. The opposite of a strong dislike

*ANSWER:* c

63. Which of the following could be an operational definition of "fearfulness"?
a. A frequent sense of dread or tension
b. A belief that the world tends to be a dangerous place
c. The amount of increased heart beat after hearing a loud noise
d. The opposite of a sense of relaxation and harmony

*ANSWER:* c

64. Which of the following could be an operational definition of "effective motherhood"?
a. A strong desire to do what is best for one's children
b. A sense of security felt by the children themselves
c. The number of children who survive to age 21
d. A desire by the mother to conform to the best advice about motherhood

*ANSWER:* c

65. Which of the following could be an operational definition of "sadness"?
a. An inability to experience joy or laughter
b. A general feeling of discouragement or despair
c. The number of tears shed during a day
d. The emotional outcome after someone has felt an important loss

*ANSWER:* c

66. Which of the following is an operational definition of "honesty"?
a. A tendency to tell the truth
b. A feeling of guilt after telling a lie
c. The amount of money returned after finding a lost wallet
d. A feeling of contempt after seeing someone else tell a lie

*ANSWER:* c

67. Which of the following is an operational definition of "thriftiness"?
a. A desire to save money
b. The amount of money saved per month
c. A reputation for spending money carefully

d. A feeling of nervousness whenever purchasing something expensive

*ANSWER:* b

68. On the Mechanical Turk website, researchers post studies and anyone who wants to can participate for a small fee. What kind of research sample does this provide?

a. It is a convenience sample.

b. It is a random sample.

c. It is a representative sample.

d. It is a statistical sample.

*ANSWER:* a

69. Suppose you interview every tenth person who enters a shopping mall one day. What kind of sample is this?

a. It is a cross-cultural sample.

b. It is a representative sample.

c. It is a random sample.

d. It is a convenience sample.

*ANSWER:* d

70. A researcher sits on a park bench and surveys every passing person who is willing to participate. What type of sample will this be?

a. A random sample

b. A representative sample

c. A convenience sample

d. A cross-cultural sample

*ANSWER:* c

71. A researcher studies a group that includes the same percentages of male and female, old and young, and so on, as the whole population. This is which type of sample?

a. Convenience sample

b. Cross-cultural sample

c. Random sample

d. Representative sample

*ANSWER:* d

72. A researcher studies a large group of people, obtaining the same percentages of male and female, young and old, as in the total population. What kind of sample is this?

a. A convenience sample

b. A cross-cultural sample

c. A representative sample

d. A random sample

*ANSWER:* c

73. Which of these characterizes a representative sample?

a. Anyone who volunteers to participate is included in the study.

b. Everyone in the population has an equal chance of being chosen for the study.

c. The percentages of male and female, old and young, match the whole population.
d. The people in the study say they are confident that their opinions are the common ones.

*ANSWER:* c

74. In what kind of sample does everyone in the population have an equal chance of being chosen?
a. A random sample
b. A representative sample
c. A convenience sample
d. An elite sample

*ANSWER:* a

75. Which of these procedures would produce a random sample of Chicago voters?
a. Take the list of all Chicago voters and draw names out of a hat.
b. Choose voters such that the percentage of male and female, Black and White, match the total percentage for the city.
c. Take a spot on a street and interview every voter who walks by you.
d. Ask for volunteers and accept every registered voter who volunteers.

*ANSWER:* a

76. Someone doing a survey in Florida interviews every 1,000th person on the census list. This procedure approximates which type of sample?
a. A random sample
b. A cross-cultural sample
c. A cross-sectional sample
d. An elite sample

*ANSWER:* a

77. What kind of sample closely matches the total population in its percentage of young and old, male and female, and various ethnic groups?
a. Convenience sample
b. Representative sample
c. Cross-cultural sample
d. Local sample

*ANSWER:* b

78. You find a difference between men and women at your college, but you wonder whether it is true for humans in general. To answer the question, what do you need?
a. Convenience sample
b. Cross-cultural sample
c. Larger sample
d. Different sample

*ANSWER:* b

79. For which of the following is a cross-cultural sample most important?
a. Studies about the basic mechanisms of vision, hearing, and other senses

b. Studies about the humanlike behaviors of chimpanzees
c. Studies about chemicals in the brain and how they influence behavior
d. Studies about which male–female differences are natural, and which ones are learned

*ANSWER:* d

80. A cross-cultural study compared all 300 residents of a remote African village to 300 volunteers from Chicago. What is the MAIN weakness in this research?
a. The researcher might not find a large difference between the cultures.
b. Chicago is not a typical American city.
c. The types of samples are not comparable.
d. A village with only 300 people is too small.

*ANSWER:* c

81. What do we call an observation of what people or animals do in their normal environments?
a. A single-blind study
b. A double-blind study
c. Naturalistic observation
d. A controlled experiment

*ANSWER:* c

82. Jane Goodall spent years observing chimpanzees in the wild. What was her technique?
a. Naturalistic observation
b. A single-blind experiment
c. A double-blind experiment
d. A correlational study

*ANSWER:* a

83. Which of the following would be most likely to rely on naturalistic observations?
a. A comparison of how two drugs affect animal learning
b. A study of how much people can improve memory by practice
c. A study of when and where people laugh the most
d. A study comparing psychotherapy to antidepressant medications

*ANSWER:* c

84. Which research method generally uses the fewest participants?
a. Single-blind experiment
b. Case history
c. Survey
d. Correlation

*ANSWER:* b

85. When do researchers most often use the case history method of research?
a. When they study the behavior of someone with a rare condition
b. When they need to study the effects of two variables at the same time

c. When they compare the frequencies of certain behaviors in different cultures

d. When they study people who are unable or unwilling to give informed consent

*ANSWER:* a

86. People with a rare type of brain damage have trouble seeing whether something is moving, or if so how fast and which direction. A study of this condition would probably rely on which method?

a. Single-blind experiment

b. Double-blind experiment

c. Case history

d. Cross-cultural research

*ANSWER:* c

87. What should every survey try to do?

a. Put the survey on the Internet so that anyone can volunteer to answer it.

b. Use a random sample or representative sample of the population.

c. Word the questions to suggest the answers you hope to receive.

d. Write all the questions at a college reading level.

*ANSWER:* b

88. Which of the following is a common problem with survey research?

a. Not enough people agree to answer the survey questions.

b. Many people express unconsidered or ill-informed opinions.

c. Most surveys have too many independent variables.

d. Most surveys have too many dependent variables.

*ANSWER:* b

89. A survey reports how many people say they have done something dishonest at work. Before we can interpret these results, what questions do we need to have answered?

a. What were they told to count as an example of a dishonest act?

b. Did the survey include equal numbers of men and women?

c. What other faults did the people admit to doing?

d. Why did someone decide to ask about dishonesty?

*ANSWER:* a

90. A survey reports how many high school students say they were "physically abused." Before we decide how seriously to take these results, which questions do we need to have answered?

a. What were they told to include as examples of physical abuse?

b. How many of them fought back after being physically abused?

c. How many of them were seniors, juniors, and sophomores?

d. Was this a double-blind study?

*ANSWER:* a

91. A survey asks, "Do you support the current laws on gun ownership?" Eighty percent of the respondents answered "no." What, if anything, can we conclude?

a. Most people think the laws are not strict enough.

b. Most people think the laws are too strict.
c. Most people know what the current laws are.
d. We can draw none of these conclusions.

*ANSWER:* d

92. What does a correlation measure?
a. It measures the percentage of people who agree with a certain statement.
b. It measures the relationship between two variables.
c. It measures the changes in a group of people over time.
d. It measures the effect of an experimental procedure.

*ANSWER:* b

93. If a researcher does not control anything, but measures the relationship between two variables, what is the research method?
a. Correlation
b. Single-blind experiment
c. Double-blind experiment
d. Cross-cultural study

*ANSWER:* a

94. A researcher finds that better-educated people tend to like their jobs more than less-educated people do. What kind of research design was probably used in this study?
a. Single-blind experiment
b. Double-blind experiment
c. Correlation
d. Case history

*ANSWER:* c

95. It has been reported that people who spend more time reading tend to have a larger vocabulary. This conclusion is probably based on which kind of study?
a. Correlation
b. Cross-cultural study
c. Single-blind experiment
d. Double-blind experiment

*ANSWER:* a

96. A researcher tests whether people with a long index finger behave differently from people with a long ring finger. What kind of research is this?
a. Case history
b. Correlation
c. Single-blind experiment
d. Double-blind experiment

*ANSWER:* b

97. People who spend more money on binoculars tend to know more about birds than people who spend less or none. This

observation was almost certainly based on what kind of study?

a. Anecdote
b. Correlation
c. Single-blind study
d. Double-blind study

*ANSWER:* b

98. What is the highest possible value for a correlation coefficient?

a. 1
b. 10
c. 100
d. infinity

*ANSWER:* a

99. If increases in one variable have no consistent relationship to changes in a second variable, what is the correlation between them?

a. -1
b. 0
c. .5
d. 1

*ANSWER:* b

100. If the correlation between variables A and B is negative, what can we conclude?

a. Increases in A are associated with decreases in B.
b. Measurements of A are lower than the measurements of B.
c. The values of A are unrelated to the values of B.
d. The strength of the relationship between A and B has been growing weaker over time.

*ANSWER:* a

101. Which of these correlation coefficients indicates it is possible to use measurements of one variable to predict a second variable with perfect accuracy?

a. -1
b. 0
c. 0.5
d. 0.75

*ANSWER:* a

102. What does it mean if the correlation between variables A and B is negative?

a. A causes B.
b. B causes A.
c. A and B are unrelated.
d. When A increases, B usually decreases.

*ANSWER:* d

**Chapter 2—Scientific Methods in Psychology**

103. Someone finds that the number of hours a student spends studying correlates negatively with a student's skill at video games. Which of the following can we conclude?

a. Students who are good at video games tend not to study as much as others.

b. Most students spend more time studying than playing video games.

c. Most students spend more time playing video games than studying.

d. As a semester progresses, students spend more time studying and less on video games.

*ANSWER:* a

104. Someone comparing many countries finds a negative correlation between the status of women and the average happiness of people in the country. Which of the following can we conclude?

a. Over decades, women's status has been improving, and so has happiness, on average.

b. Over decades, women's status has been improving, but happiness has not.

c. The status of women has no consistent relationship to people's happiness.

d. Where women have low status, people tend to be less happy.

*ANSWER:* d

105. Researchers find that people who spend more time watching television spend less time reading. (Yeah, big surprise.) What kind of correlation does this study illustrate?

a. Positive correlation

b. Zero correlation

c. Negative correlation

d. Illusory correlation

*ANSWER:* c

106. If the correlation between variables A and B is positive, then which of the following is true?

a. The mean value of A is greater than the mean value of B.

b. The mean value of B is greater than the mean value of A.

c. Measurements of one variable help us predict the other one, approximately.

d. Over time, the mean values of both A and B have been increasing.

*ANSWER:* c

107. If the correlation between two variables is strongly negative, which of these is true?

a. We could use measurements of one of them to help predict the other.

b. The two variables are unrelated.

c. One of the variables has much smaller values than the other.

d. The relationship between the two variables has been growing weaker over time.

*ANSWER:* a

108. If the correlation between variable A and variable B is 0, then which of the following is true?

a. Increases in A have no relationship to the values of B.

b. The mean value of A equals the mean value of B.

c. When values of A increase, the values of B decrease.

d. The relationship between A and B has been steady over time.

*ANSWER:* a

**Chapter 2—Scientific Methods in Psychology**

109. If increases in variable A have no relationship to the values of variable B, then what type of correlation holds between A and B?

a. A has a positive correlation with B.

b. A has a zero correlation with B.

c. A has a negative correlation with B.

d. We do not have enough information to know the direction of correlation.

*ANSWER:* b

110. If a researcher finds a near-zero correlation between variables A and B, one possible explanation is that the two variables are unrelated. What is the other possible explanation?

a. The researcher had poor measurements of the variables.

b. Whenever variable A increases, the value of B decreases.

c. The mean value of A is equal to the mean value of B.

d. Whenever variable A increases, the value of B increases also.

*ANSWER:* a

111. If the correlation between variables A and B is zero, what can we conclude?

a. A and B have the same mean, the same median, and the same distribution.

b. As A goes up, B does not consistently go either up or down.

c. The mean value of either A or B must be zero.

d. If we know the value of A, we can predict the value of B with zero error.

*ANSWER:* b

112. What does it mean to say the correlation between two variables is zero?

a. The two variables have the same mean and the same distribution.

b. Measuring one variable gives no information useful in predicting the other.

c. Neither variable measures anything of practical importance.

d. The strength of the relationship between the variables has decreased over time.

*ANSWER:* b

113. People who exercise regularly have a lower probability of becoming depressed. Therefore the correlation between exercise and depression is what?

a. Positive

b. Negative

c. Zero

d. Unknown

*ANSWER:* b

114. We find we can use measurements of variable A to predict measurements of B with moderate accuracy. Therefore, what can we conclude about the correlation between A and B?

a. It is positive.

b. It is negative.

c. It is zero.

d. It is either positive or negative, but not zero.

**Chapter 2—Scientific Methods in Psychology**

*ANSWER:* d

115. What is true about research using correlations?
a. Individuals are randomly assigned to two or more groups.
b. A negative correlation is just as useful as a positive correlation.
c. All procedures are carried out with a double-blind design.
d. Correlational research leads to cause-and-effect conclusions.

*ANSWER:* b

116. Which of the following correlation coefficients indicates the weakest relationship between two variables—that is, the weakest ability to use one variable to predict the other?
a. +1
b. 0.5
c. 0
d. -1

*ANSWER:* c

117. Of these correlation coefficients, which indicates the strongest relationship between variables?
a. +0.5
b. +0.25
c. 0
d. -0.75

*ANSWER:* d

118. What is an illusory correlation?
a. A relationship between two imaginary variables
b. A relationship between a psychological variable and a physical variable
c. An imagined or greatly exaggerated relationship
d. A relationship that has been growing stronger over time

*ANSWER:* c

119. It seems that it always rains when you wanted to go camping. However, you never kept any systematic records. The apparent relationship is probably an example of what?
a. A significant negative correlation
b. An illusory correlation
c. A significant positive correlation
d. A double-blind study

*ANSWER:* b

120. Deliria and her sister Oblivia remember all the times their horoscopes seemed right, but they forget the times they were wrong. What is the result?
a. A negative correlation
b. A positive correlation
c. An illusory correlation

d. A significant correlation

*ANSWER:* c

121. Why do many people continue to believe in illusory correlations?

a. People remember only the most recent events and forget the earlier events.

b. People pretend to believe things they don't really believe.

c. People remember the events that fit their expectations.

d. People make errors in their mathematical calculations.

*ANSWER:* c

122. What is a placebo?

a. It is a procedure intended to eliminate the effects of independent variables.

b. It is a pill with no known pharmacological effects.

c. It is an observer who does not know the experimenter's predictions.

d. It is a procedure given prior to asking for informed consent.

*ANSWER:* b

123. If variables A and B have a strong positive correlation, which of these, if any, can we conclude?

a. A causes B.

b. B causes A.

c. Something else causes both A and B.

d. We cannot draw any of these conclusions.

*ANSWER:* d

124. The correlation between A and B is higher than the correlation between C and D. What, if anything, can we conclude about causation?

a. A causes B.

b. A causes B, and C causes D.

c. Either A causes B, or B causes A.

d. We cannot conclude anything about causation.

*ANSWER:* d

125. People's use of marijuana correlates positively with their probability of developing schizophrenia. What, if anything, can we conclude from this observation?

a. Marijuana increases the risk of schizophrenia.

b. People developing schizophrenia become more likely to use marijuana.

c. Neighborhoods where schizophrenia is common tend to have easy access to marijuana.

d. We can draw none of these conclusions.

*ANSWER:* d

126. Suppose we find a strong positive correlation between how happy people are and how many friends they have. Which conclusion, if any, can we draw?

a. Being happy helps you make friends.

b. Having friends makes you happy.

c. Being healthy increases happiness, and also increases the chance of friendships.

d. None of these conclusions follow from the data.

*ANSWER:* d

127. People's happiness correlates positively with how often they eat at nice restaurants. From this observation, what conclusion (if any) can we draw?

a. People celebrate happy events by eating at nice restaurants.

b. Eating at nice restaurants helps make people feel happy.

c. People who can afford to eat at nice restaurants tend to be happy.

d. The results do not justify any of these conclusions.

*ANSWER:* d

128. People's frequency of exercising at a gym correlates positively with how many magazines they read. Which of these conclusions, if any, follows from these data?

a. While people are exercising at a gym, they like to read magazines.

b. Many people read magazines that recommend the value of exercise.

c. People who can afford to belong to a gym can also afford to buy magazines.

d. None of these conclusions follow from the data.

*ANSWER:* d

129. Suppose we find that how many other people someone sees in a day correlates positively with how often the person gets a haircut. Which of the following conclusions can we draw, if any?

a. While getting a haircut, someone is likely to see many other people.

b. Someone who is trying to make a good impression on other people tries to look good.

c. Living in a big city increases how many people you see and how much you care about grooming.

d. We can draw none of these conclusions.

*ANSWER:* d

130. Healthy people tend to be happier than unhealthy people. From this kind of information, which of the following (if any) can we conclude?

a. Good health increases people's happiness.

b. Happiness increases people's efforts to maintain their health.

c. Certain genes that tend to increase happiness also tend to improve health.

d. We can draw none of these conclusions.

*ANSWER:* d

131. Older people who eat more chocolate tend to have a better memory. What conclusion, if any, can we draw from these data?

a. Chocolate improves memory.

b. Older people with good memory can remember where they put the chocolate.

c. Healthier people eat chocolate and have a good memory.

d. We can draw none of these conclusions.

*ANSWER:* d

132. Showing up on time for class correlates positively with better grades in the course. What conclusion, if any, follows?

a. Being in class the whole time improves learning of the material.
b. Students who are doing well in the course tend to show more interest.
c. Students who are conscientious about attendance are also conscientious about studying.
d. None of these conclusions follow from the observation.

*ANSWER:* d

133. For children, the hours watching *Sesame Street* on television correlates positively with higher vocabulary. Which conclusion, if any, can we draw from this result?
a. Watching *Sesame Street* increases children's vocabulary.
b. Children with a good vocabulary enjoy watching *Sesame Street.*
c. Upper-middle-class families have children with good vocabularies and encourage children to watch *Sesame Street.*
d. None of these conclusions follow from the result.

*ANSWER:* d

134. The mean happiness of a country correlates positively with the education of women in the country. What conclusion, if any, can we draw from this result?
a. Educated women make a country happier.
b. As a country becomes happier, it increases education of its women.
c. Wealthier countries tend to be happier, and to educate the women.
d. We can draw none of these conclusions.

*ANSWER:* d

135. Suppose we find that the amount of sleep someone gets correlates positively with creative thinking. What conclusion, if any, would follow from this result?
a. Getting enough sleep increases creative thinking.
b. Creative thinking increases the need for sleep.
c. People with more leisure time can afford to sleep, and have a chance to think creatively.
d. None of these conclusions follows from the result.

*ANSWER:* d

136. What is the main difference between a correlational study and an experiment?
a. Correlational studies take place in a laboratory, whereas experiments occur in nature.
b. In an experiment, the investigator manipulates the independent variable.
c. Participants give informed consent for correlations, but not for experiments.
d. Correlations have several independent variables, whereas experiments avoid them.

*ANSWER:* b

137. A researcher who wants to determine cause and effect uses which of these methods?
a. Naturalistic observation
b. Survey
c. Experiment
d. Correlation

*ANSWER:* c

**Chapter 2—Scientific Methods in Psychology**

138. In what way does the experimental method have an advantage over correlational studies?
a. An experiment can be completed more quickly, and with less equipment.
b. An experiment does not require the use of statistical tests.
c. An experiment poses fewer ethical problems.
d. An experiment is more likely to determine cause-and-effect relationships.
*ANSWER:* d

139. Compared to a correlational study, which of these is a big advantage to an experiment?
a. An experiment can be performed without asking for informed consent.
b. An experiment requires less cost and less equipment.
c. An experiment is less likely to be influenced by independent variables.
d. An experiment is more likely to demonstrate cause and effect.
*ANSWER:* d

140. How does a correlational study differ from an experiment?
a. In a correlational study, the researcher allows participants to record their own behavior.
b. In a correlational study, the researcher manipulates one or more independent variables.
c. In a correlational study, the researcher does not control any of the variables.
d. In a correlational study, the researcher starts by randomly assigning individuals to groups.
*ANSWER:* c

141. In which type of study would participants be randomly assigned to groups?
a. A case history
b. A survey
c. An experiment
d. A correlational study
*ANSWER:* c

142. Suppose someone finds that people who drank coffee got less sleep than those who didn't. To know whether this statement came from an experiment or a correlation, which question should we ask?
a. Were people randomly assigned to two groups, or did they decide for themselves?
b. Was this the result for just one night, or the average over several nights?
c. In what way did the researchers measure the amount of sleep?
d. How large was the difference between the two groups?
*ANSWER:* a

143. What is an independent variable?
a. Something that occurs, but cannot be measured
b. Something that the researcher changes or controls
c. Something that the researcher measures to determine the outcome
d. Something irrelevant to the procedure that might interfere with the results
*ANSWER:* b

144. What is a dependent variable?

a. Something that occurs, but cannot be measured
b. Something that the researcher changes or controls
c. Something that the researcher measures to determine the outcome
d. Something irrelevant to the procedure that might interfere with the results

*ANSWER:* c

145. A professor presents a test in black ink for half the students and in red ink for the other half, and compares the students' test scores. What is the independent variable in this experiment?
a. The number of students in each group
b. The color of ink on the test
c. The students' test scores
d. The difficulty of the test

*ANSWER:* b

146. A professor presents a test in black ink for half the students and in red ink for the other half, and compares the students' test scores. What is the dependent variable in this experiment?
a. The number of students in each group
b. The color of ink on the test
c. The students' test scores
d. The difficulty of the test

*ANSWER:* c

147. A researcher tests learning for one group of rats in a cold room and for another group in a warm room. What is the independent variable in this experiment?
a. The rats' learning performance
b. The experimenter
c. The temperature of the room
d. The size of the room

*ANSWER:* c

148. A researcher tests learning for one group of rats in a cold room and for another group in a warm room. What is the dependent variable in this experiment?
a. The rats' learning performance
b. The experimenter
c. The temperature of the room
d. The size of the room

*ANSWER:* a

149. A store plays background music on some days, randomly chosen, and none on other days. It compares sales on the two kinds of days. What is the independent variable in this experiment?
a. The workers in the store
b. The volume of sales
c. The presence or absence of music
d. The variations in weather

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*ANSWER:* c

150. A store plays background music on some days, randomly chosen, and none on other days. It compares sales on the two kinds of days. What is the dependent variable in this experiment?

a. The workers in the store
b. The volume of sales
c. The presence or absence of music
d. The variations in weather

*ANSWER:* b

151. A company pays one group of workers weekly and another group, randomly chosen, once a month. It compares the workers' effectiveness. What is the independent variable in this experiment?

a. The frequency of pay
b. The difficulty of the job
c. Daily variations in the weather
d. The workers' job effectiveness

*ANSWER:* a

152. A company pays one group of workers weekly and another group, randomly chosen, once a month. It compares the workers' effectiveness. What is the dependent variable in this experiment?

a. The frequency of pay
b. The difficulty of the job
c. Daily variations in the weather
d. The workers' job effectiveness

*ANSWER:* d

153. A track coach asks half of the athletes, chosen randomly, to try wearing a new type of shoe. Later the coach compares results for those wearing the new and old shoe types. What is the independent variable in this experiment?

a. The type of shoe
b. The athletes' performances
c. Variations in the weather
d. The track coach

*ANSWER:* a

154. A track coach asks half of the athletes, chosen randomly, to try wearing a new type of shoe. Later the coach compares results for those wearing the new and old shoe types. What is the dependent variable in this experiment?

a. The type of shoe
b. The athletes' performances
c. Variations in the weather
d. The track coach

*ANSWER:* b

155. A researcher asks people to drink coffee before or after reading an essay, and later compares the memory of the two groups. What is the independent variable in this experiment?

a. The time of drinking coffee

b. The nature of the essay
c. The memory performances
d. The brand of coffee

*ANSWER:* a

156. A researcher asks people to drink coffee before or after reading an essay, and later compares the memory of the two groups. What is the dependent variable in this experiment?

a. The time of drinking coffee
b. The nature of the essay
c. The memory performances
d. The brand of coffee

*ANSWER:* c

157. If people in the experimental group get some drug that might improve memory, what do people in the control group do?

a. They get some ineffective chemical instead of the drug.
b. They get to decide whether or not to take the drug.
c. They observe the people in the experimental group.
d. They wait until they find out how effective the drug was.

*ANSWER:* a

158. After all people in an experiment watch a movie, those in the experimental group get hypnotized before trying to remember details from the movie. What will the control group in this experiment do?

a. Answer the questions without being hypnotized.
b. Measure the memory of the people in the experimental group.
c. Decide whether they want to be hypnotized.
d. Help the experimenter design the next experiment.

*ANSWER:* a

159. To determine the effect of distraction, an experimenter tests the memory of people who try to read a chapter while listening to loud music. What will the control group do?

a. Read the chapter without the music, and then answer the questions.
b. Decide whether or not to listen to the music while reading the chapter.
c. Read the chapter while listening to the music, but then leave without answering questions.
d. Help the experimenter design the next experiment.

*ANSWER:* a

160. To which of the following does an experimenter apply "random assignment"?

a. Research participants
b. Means and medians
c. Correlation coefficients
d. Survey questions

*ANSWER:* a

161. How does an experimenter try to equate the experimental group and the control group?

a. The experimenter attempts to increase the demand characteristics.
b. The experimenter attempts to eliminate all independent variables.
c. The experimenter attempts to eliminate all dependent variables.
d. The experimenter uses random assignment of participants.

*ANSWER:* d

162. What does random assignment do?
a. It increases the variance of measurements.
b. It increases the correlation between two variables.
c. It eliminates the effects of the independent variables.
d. It determines who will be in the experimental group.

*ANSWER:* d

163. Random assignment occurs in which type of research study?
a. Correlation
b. Experiment
c. Survey
d. Naturalistic observation

*ANSWER:* b

164. Which of the following is part of an experiment but NOT part of a correlational study?
a. A case history
b. Careful avoidance of independent variables
c. Random assignment to groups
d. Operational definitions

*ANSWER:* c

165. What is the benefit of random assignment in an experiment?
a. It increases the probable effect of the procedure.
b. It minimizes the need for statistical tests after the data have been collected.
c. It reduces the chance that the groups differ greatly at the start of the experiment.
d. It decreases the influence of any independent variables.

*ANSWER:* c

166. A professor provides a special study guide to the students who chose seats in the front two rows of class. Later these students get better than average test scores. What is wrong with this experiment?
a. The professor failed to provide demand characteristics.
b. The procedure probably had too many independent variables.
c. Students were not randomly assigned to groups.
d. The experiment did not have a hypothesis.

*ANSWER:* c

167. Because people who join Alcoholics Anonymous control their alcohol problems better than people who do not join, a researcher concludes that Alcoholics Anonymous is highly effective. What is a major limitation on this study?

a. The research had too many independent variables.
b. The research did not have a hypothesis.
c. The research did not have demand characteristics.
d. People were not randomly assigned to groups.

*ANSWER:* d

168. Because students who took a calculus course do better in biology than students who did not take calculus, a researcher concludes that understanding calculus is helpful for understanding biology. What is wrong with this study?
a. Calculus is a more difficult subject than biology.
b. Biology is a more difficult subject than calculus.
c. The research had too many independent variables.
d. Students were not randomly assigned to groups.

*ANSWER:* d

169. Because students at private high schools get better test scores, on average, than those in public schools, a researcher concludes that the private high schools provide a better education. What is a major weakness of this study, from a scientific standpoint?
a. Students were not randomly assigned to groups.
b. Public high schools tend to be larger than private high schools.
c. Private high schools are more expensive than public high schools.
d. Many students prefer public schools, because they have friends there.

*ANSWER:* a

170. What is meant by experimenter bias?
a. It is the tendency for experimenters to come from certain ethnic groups more than others.
b. It is the unwanted influence of an experimenter's expectations.
c. It is the experimenter's preference for doing certain experiments more than others.
d. It is someone's preference for doing experiments instead of correlations.

*ANSWER:* b

171. What is a "blind observer" in an experiment?
a. A blind observer does not know the experimenter's predictions.
b. A blind observer has no previous experience in psychological research.
c. A blind observer tries to predict the results before the experiment starts.
d. A blind observer listens to people without watching them.

*ANSWER:* a

172. Why is it sometimes important for an experiment to use a blind observer?
a. To minimize the effect of experimenter bias
b. To avoid the need for informed consent
c. To combine the results of the experiment with a correlational study
d. To minimize the effect of an independent variable

*ANSWER:* a

**Chapter 2—Scientific Methods in Psychology**

173. Dr. Wow believes a certain training program can increase creativity. She administers the program to a randomly chosen group, and not to the control group, and later evaluates the ideas from the experimental group as being more creative. What procedure would have improved this study?

a. She should have had more people in the experimental than the control group.

b. She should have had a blind observer evaluate the creativity.

c. She should have been careful to eliminate all independent variables.

d. She should have let people decide whether to be in the experimental or control group.

*ANSWER:* b

174. A researcher, who predicts that left-handers are better artists than right-handers, watches people draw and evaluates their art. What would be the most important way to improve this study?

a. Randomly assign people to being left- or right-handed.

b. Evaluate their music as well as their art.

c. Use a "blind" observer.

d. Be sure to have an equal number of left- and right-handers.

*ANSWER:* c

175. A therapist provides treatment to 50 percent of people with depression seeking help, while putting the others on a waiting list. After three months, he evaluates most of his patients as less depressed than those on the waiting list. What is wrong with this study?

a. The therapist should have used a blind observer.

b. The study has too many independent variables.

c. The study does not have enough demand characteristics.

d. The study should have had more people on the waiting list.

*ANSWER:* a

176. In a double-blind study, who knows which participants are in the experimental group?

a. Only the participants themselves

b. Only the observer who evaluates the participants

c. Both the participants and the observer who evaluates them.

d. Only the experimenter who organized the study

*ANSWER:* d

177. A researcher gives a new drug to 50 volunteers and later evaluates their behavior, reporting that the drug made them happier than similar people who did not volunteer. What is wrong with this study?

a. The study lacks both an independent variable and a dependent variable.

b. The study has too many independent variables and not enough demand characteristics.

c. The people in the control group should have received the drug also.

d. Participants were not assigned randomly and the observer was not blind.

*ANSWER:* d

178. A tennis coach believes orange juice improves performance. She gives her players orange juice on randomly chosen days, and rates their performance. What, if anything, is wrong with this study?

a. People in a control group should drink orange juice on the same days.

b. The players should be able to choose when to drink orange juice.

c. The study should have a blind observer.

d. Nothing is wrong with this study.

*ANSWER:* c

179. To test the effect of background music on class performance, Professor Jones plays soft background music for his introductory class and no music for his advanced class. He counts the number of "intelligent questions" in each class and reports more in the class with music. What are the two things wrong with this experiment?

a. Lack of an independent variable and lack of demand characteristics

b. Lack of a control group and lack of a dependent variable

c. Lack of random assignment and lack of blind observations

d. Lack of a hypothesis and lack of a correlation

*ANSWER:* c

180. To test the effects of thirst on work motivation, a company permits older workers to use the water cooler but not the younger workers. The experimenter who designed the study watches the workers to decide who appears more motivated. What are two serious flaws in this experiment?

a. It has neither random assignment nor blind observations.

b. It has several independent variables and a falsifiable hypothesis.

c. It has neither a hypothesis nor a method.

d. It has a falsifiable hypothesis and too few demand characteristics.

*ANSWER:* a

181. Demand characteristics have a possible effect on whom?

a. The participants in an experiment

b. The person who evaluates the results of an experiment

c. The person who designs the experiment

d. The people who read about the results of an experiment

*ANSWER:* a

182. What do we call the cues that hint to the research participants what the experimenter hopes to find?

a. Demand characteristics

b. Independent variables

c. Dependent variables

d. Correlation coefficients

*ANSWER:* a

183. If people expect a drug to make them friendlier, they act friendlier. If they expect the same drug to make them less friendly, they act less friendly. What does this tendency illustrate?

a. Demand characteristics

b. Blind observers

c. Illusory correlation

d. Independent variables

*ANSWER:* a

184. How does a researcher reduce the effects of demand characteristics?

a. Discard data from anyone whose results are far from the mean.
b. Conceal the purpose of the experiment from the participants.
c. Allow participants to decide whether to be in the experimental or control group.
d. Keep informing the participants how well they are doing while the study is in progress.

*ANSWER:* b

185. People who believe they have taken a hallucinogenic drug sometimes report hallucinations, even if they took a placebo. Which of these does this phenomenon illustrate?
a. Experimenter bias
b. Independent variables
c. Demand characteristics
d. Blind observations

*ANSWER:* c

186. Which of these does a psychological researcher try to avoid or minimize?
a. Demand characteristics
b. Falsifiable hypotheses
c. Independent variables
d. Dependent variables

*ANSWER:* a

187. Which of the following is undesirable for psychological research and theories?
a. Independent variables
b. Parsimony
c. Demand characteristics
d. Falsifiable hypotheses

*ANSWER:* c

188. Which of the following helps to alleviate the problems caused by demand characteristics?
a. A double-blind study
b. Informed consent
c. Replicability
d. Statistical significance

*ANSWER:* a

189. A professor invites students who did poorly on the first test to attend a special review session before the second test. Most do better on the second test. What kind of research is this?
a. A before-and-after study
b. A single-blind experiment
c. A double-blind experiment
d. A case history

*ANSWER:* a

190. Under what circumstances are the results of a before-and-after study difficult to interpret?

a. If the study does not include a control group
b. If the study includes too many participants
c. If the study starts with a falsifiable hypothesis
d. If the participants are a random sample of the population

*ANSWER:* a

191. An investigator trying to demonstrate Lamarckian evolution tested rats' ability to learn a swimming maze, and then bred those rats and demonstrated that the next generation learned faster. What was the flaw in this study?

a. The original study had no control group.
b. The original study failed to provide an operational definition of learning.
c. The original study used an unusual strain of rats.
d. The researcher in the original study failed to keep adequate records.

*ANSWER:* a

192. In an early study, an investigator trying to demonstrate Lamarckian evolution tested rats' ability to learn a swimming maze, and then bred those rats and demonstrated that the next generation learned faster. What conclusion did the research support, if any?

a. When rats learn something, their offspring inherit the knowledge.
b. Breeding rats in a laboratory enables them to evolve greater intelligence.
c. Rats learn faster in a swimming maze than they do in a walking maze.
d. The results did not lead to a conclusion, because of the absence of a control group.

*ANSWER:* d

193. A professor invites students who did poorly on the first test to attend a special review session before the second test. Most do better on the second test. What conclusion, if any, can we draw, and why?

a. We conclude that the study session helped, because the scores improved.
b. We conclude that the most motivated students attended the review session, because scores improved.
c. We draw no conclusion, because the study has too many independent variables.
d. We draw no conclusion, because the study lacks a control group.

*ANSWER:* d

194. A psychologist provides therapy to 20 extremely fearful people, and finds that over the next six months, most become less fearful. The psychologist concludes that the therapy helped. What is a major defect in this study?

a. It lacks a control group.
b. It has too many independent variables.
c. It doesn't have enough demand characteristics.
d. It doesn't have a dependent variable.

*ANSWER:* a

195. A researcher asks a group of unhappy people to follow the advice in their newspaper horoscopes, and finds that over six months most of them become happier. What is the main problem with this research?

a. Most scientists are skeptical of horoscopes.
b. The study has no control group.
c. The study has too many independent variables.
d. Six months is too short a time for a before-and-after study.

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*ANSWER:* b

196. An online dating service reports that 45 percent of their clients started a satisfactory relationship within one year. Why is it difficult to evaluate how impressive that result is?

a. We don't know when within the year those relationships started.
b. We don't know how much the dating service charged for their services.
c. We don't know the result for an appropriate control group.
d. Forty-five percent is less than half.

*ANSWER:* c

197. What is a "descriptive statistic"?

a. A rule about how to conduct a research study
b. A prediction of probable results
c. An exaggeration of the actual results
d. A mathematical summary of results

*ANSWER:* d

198. During the last five days, Sarah studied 3, 5, 9, 3, and 10 hours (for a total of 30). What was her mean number of study hours per day?

a. 3
b. 5
c. 6
d. 9

*ANSWER:* c

199. During the last five days, Sarah studied 3, 5, 9, 3, and 10 hours (for a total of 30). What was her median number of hours studied per day?

a. 3
b. 5
c. 6
d. 9

*ANSWER:* b

200. During the last five days, Sarah studied 3, 5, 9, 3, and 10 hours (for a total of 30). What was her mode in number of hours studied per day?

a. 3
b. 5
c. 6
d. 10

*ANSWER:* a

201. The Central Math & Science high school "Fighting Hypotenuses" scored 40, 45, 55, 40, and 60 points (a total of 240) in their first five basketball games. What was their median number of points?

a. 40
b. 45

c. 48
d. 55

*ANSWER:* b

202. The Central Math & Science high school "Fighting Hypotenuses" scored 40, 45, 55, 40, and 60 points (a total of 240) in their first five basketball games. What was their mean number of points?
a. 40
b. 45
c. 48
d. 55

*ANSWER:* c

203. Which of the following is true of normal distributions?
a. The mean is zero.
b. The mean equals twice the median.
c. The median equals twice the mean.
d. The distribution is symmetrical.

*ANSWER:* d

204. The mean salary at your company is $100,000 per year, but most workers are earning minimum wage. How can the mean be so high?
a. The median salary is much higher than the mean salary.
b. The mean salary does not include the president's salary.
c. The salaries at your company fit the normal distribution.
d. A few people are earning extremely high salaries.

*ANSWER:* d

205. If we want to know the central, or typical, score, when is the mean a misleading figure?
a. If the scores fit the normal distribution
b. If a few individuals score vastly higher or lower than most of the others
c. If the mean, median, and mode are all the same score
d. If the total number of scores is greater than a thousand

*ANSWER:* b

206. If we want to describe the "average" person, when would the mean and median give very different results?
a. The sample follows the normal distribution.
b. The mean is equal to the mode.
c. A few individuals have extreme scores.
d. The sample includes thousands of individuals.

*ANSWER:* c

207. Which of the following is an example of an inferential statistic?
a. The mean
b. The median

c. The mode
d. The *p* value

*ANSWER:* d

208. What are "inferential statistics"?
a. Mathematical summaries of results
b. Sums that combine the mean, median, and mode
c. Estimates of the whole population, based on a sample
d. Predictions of the results, prior to starting the experiment

*ANSWER:* c

209. In the statement "$p < 0.05$," what does *p* stand for?
a. Psychologists
b. Percentage
c. Probability
d. Prevention

*ANSWER:* b

210. What does "$p < 0.05$" mean?
a. Random events would produce this outcome less than 5 percent of the time.
b. The correlation between two variables is very low, almost random.
c. Fewer than 5 percent of individuals had scores above the mean.
d. Fewer than 5 percent of scientists agree with this theory.

*ANSWER:* a

211. In the statistical statement "$p < 0.05$,: what does the *p* indicate?
a. The strength of correlation between two variables
b. The amount of consistency in the results over a period of time
c. The probability that random events would produce the outcome
d. The amount of difference between two groups

*ANSWER:* c

212. If an analysis of the difference between the experimental group and the control group indicates that "$p < 0.05$," which of the following is true?
a. Random results would produce a difference of that size less than 5 percent of the time.
b. There is less than a 5 percent chance that the experimenter made any mistakes in the research.
c. Less than 5 percent of those in the control group exceeded the mean for the experimental group.
d. The difference between the two groups is less than 5 percent.

*ANSWER:* a

213. An investigator analyzes the results determines that $p < 0.05$. Why is *p* important?
a. It tells us how many individuals were affected by the experimental treatment.
b. It tells us how accurately the experimenter measured the results.
c. It tells us how improbable the results would be by chance alone.

d. It tells us how consistent the results are from one study to another.

*ANSWER:* c

214. If $p < 0.05$, then which of the following is true?

a. The result is larger than usually occurs by chance.

b. The effectiveness of the treatment has been growing weaker over time.

c. The difference between two groups is, on average, less than 5 percent.

d. The apparent result of the experiment is difficult to replicate.

*ANSWER:* a

215. What is the relationship between the value of $p$ (such as $p < 0.05$) and statistical significance?

a. The closer the value of $p$ is to 0.05, the more significant the result is.

b. The higher the value of $p$, the more significant the result is.

c. The lower the value of $p$, the more significant the result is.

d. The value of $p$ is unrelated to statistical significance.

*ANSWER:* c

216. Researchers typically consider a result statistically significant if which of these is true?

a. The median is greater than the mean.

b. The mean is greater than the median.

c. The correlation coefficient is close to zero.

d. The value of $p$ is less than 0.05.

*ANSWER:* d

217. If the results of an experiment indicate that $p < 0.05$, which of these is correct?

a. There is less than a 5 percent probability that chance produced this result.

b. Chance alone would produce this result less than 5 percent of the time.

c. We are 95 percent confident that the conclusion is correct.

d. We are less than 5 percent confident that the conclusion is correct.

*ANSWER:* b

218. What does $p < 0.05$ mean?

a. Random results would look like this less than 5 percent of the time.

b. There is less than a 5 percent probability that chance alone produced this result.

c. Fewer than 5 percent of the results matched the prediction.

d. We are less than 5 percent confident that the results are correct.

*ANSWER:* a

219. What does $p < 0.05$ mean?

a. The results are so unlikely that there has to be some explanation.

b. The results are so unlikely that we are entitled to look for an explanation.

c. The results are so unsurprising that we do not need an explanation.

d. The results are so hard to replicate that we should not look for an explanation.

*ANSWER:* b

**Chapter 2—Scientific Methods in Psychology**

220. Traditionally, psychologists have considered a result "significant" if $p < 0.05$. What is one major objection to this practice?

a. It requires experimenters to put many people in the control group.
b. It makes a yes/no decision instead of offering degrees of confidence.
c. It measures only the size of the effect, not its probability of occurrence.
d. Statistical tests are more difficult to calculate than they are worth.

*ANSWER:* b

221. Which of these is an alternative to stating the *p* value of a research result?

a. State the mean and median for each group.
b. State the number of participants in each group.
c. State the correlation between two variables.
d. State the 95 percent confidence intervals for each group.

*ANSWER:* d

222. When is a research result impressive?

a. If the *p* value is large and the 95 percent confidence interval is large.
b. If the *p* value is large and the 95 percent confidence interval is small.
c. If the *p* value is small and the 95 percent confidence interval is.large
d. If the *p* value is small and the 95 percent confidence interval is small.

*ANSWER:* d

223. What does the 95 percent confidence interval indicate about a set of results?

a. It indicates the probability that the experimenter conducted the study properly.
b. It indicates the range within which the true mean probably lies.
c. It indicates the size of difference between the mean and the median.
d. It indicates the probability that someone else can replicate the result.

*ANSWER:* b

224. Which of the following has become a serious worry for psychological researchers?

a. They worry that too many studies deal with children instead of adults.
b. They worry that some published results may not be replicable.
c. They worry that not enough research studies are reporting statistical significance levels.
d. They worry that too many research boards are requiring informed consent.

*ANSWER:* b

225. Which of the following has become more common in psychology than it used to be?

a. Research studies without asking for informed consent
b. Attempts to replicate other researchers' findings
c. Research that reports the *p* value of the results
d. Laboratory research on animal learning

*ANSWER:* b

**Chapter 2—Scientific Methods in Psychology**

226. Why are many psychologists concerned about the replicability of their research?
a. The U.S. government passed a law requiring every research study to be replicated.
b. Apparently significant results can occur by accident.
c. Researchers have been shifting from *p* levels to 95 percent confidence levels.
d. Psychological researchers are unable to measure anything accurately.

*ANSWER:* b

227. Suppose someone reports an unexpected difference between two groups, with $p < 0.05$ and nonoverlapping 95 percent confidence intervals. Before we decide how seriously to take this report, what question should we ask?
a. Is the finding replicable?
b. Is the finding statistically significant?
c. Do the means for the two groups differ?
d. Did the two groups have equal numbers of participants?

*ANSWER:* a

228. Why do researchers try to replicate a result, especially a surprising one?
a. To guard against accidental findings
b. To determine whether it is statistically significant
c. To increase the number of practical applications
d. To compete against the original researchers

*ANSWER:* a

229. It is likely that many published studies represent random fluctuations in data, rather than true phenomena. How do scientists guard against this possibility?
a. They recalculate the statistics of the published study.
b. They ask for replications of surprising results.
c. They accuse the author of fraud if the results seem surprising.
d. They disbelieve any result that does not have a strong theoretical basis.

*ANSWER:* b

230. A research finding is especially hard to replicate under which of these conditions?
a. If the finding is statistically significant
b. If attempts to replicate use exactly the same procedure as the original study
c. If attempts to replicate use few participants or imprecise measurements
d. If attempts to replicate use more precise measurements than the original study

*ANSWER:* c

231. In certain studies with rats, female scientists get consistently different results from those of male scientists. Why?
a. Female scientists tend to talk more than male scientists do.
b. On average, female scientists tend to be more afraid of the rats.
c. On average, male scientists handle the rats more roughly.
d. Rats produce a stress response to the smell of male scientists.

*ANSWER:* d

**Chapter 2—Scientific Methods in Psychology**

232. If scientists cannot find conditions under which they can replicate a research result, what do they do?
a. They assume that the original researcher was dishonest.
b. They continue to accept the original finding anyway.
c. They ignore the result in theory and practice.
d. They assume that the finding depends on influences that science cannot measure.
*ANSWER:* c

233. Ethical research with human participants requires which of the following?
a. Always pay the participants at least a minimum wage for the hours spent.
b. Start by informing people of the history of research on the topic being studied.
c. Start by informing people of the procedures and asking for their consent.
d. Conduct only the same type of procedures that other researchers have already used.
*ANSWER:* c

234. Before conducting research on humans, what must a researcher obtain?
a. A license from the American Psychological Association
b. Licenses from the national and local governments
c. Informed consent from each participant
d. A web page on which to post the results
*ANSWER:* c

235. Research with humans requires informed consent. Who signs that informed consent?
a. The experimenter
b. The state or national association of psychologists
c. The people participating in the study
d. The president of the university
*ANSWER:* c

236. An Institutional Review Board provides what function in research?
a. It maintains records about which people participated in which study.
b. It pays the people who participate in a research study.
c. It decides which studies are or are not ethical.
d. It provides a list of the people who are willing to participate in research.
*ANSWER:* c

237. Who decides which research studies on humans are ethically permissible?
a. The dean of the college
b. The mayor of the city
c. The Institutional Review Board
d. Friends or relatives of the people volunteering for a study
*ANSWER:* c

238. Who, if anyone, supervises the treatment of laboratory animals?
a. A committee appointed by the college or other institution

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b. The company that sold the animals to the researcher
c. Anyone who wishes to inspect the laboratory
d. No one, other than the researchers themselves

*ANSWER:* a

239. A standard deviation measures what?
a. The variation of scores within a group
b. The probability of replicating a result
c. The difference in scores between two groups
d. The difference between the actual results and the predicted results

*ANSWER:* a

240. If most scores are far from the mean, what will be true of the standard deviation?
a. It will be equal to the mean.
b. It will be small.
c. It will be large.
d. It will be hard to calculate.

*ANSWER:* c

241. If the standard deviation is small, then which of these is correct?
a. Most scores are inaccurate.
b. Most scores are larger than the mean.
c. Most scores are close to the mean.
d. Most scores are smaller than the mean.

*ANSWER:* c

242. On the first test, the mean is 75, your score is 90, and the standard deviation is 15. On the second test, the mean is 75, your score is 85, and the standard deviation is 5. Compared to other students, how well did you do on the two tests?
a. You did better on the first test.
b. You did better on the second test.
c. You did equally well on both tests.
d. Not enough information is given to answer the question.

*ANSWER:* b