Total Assessment Guide		Chapter 2 Reading and Evaluating Scientific Research		
Topic		**Factual**	**Conceptual**	**Applied**
Chapter Quiz	Multiple Choice	1,9, 12, 15	2, 4-6,13	3, 7-8, 10-11, 14
MODULE 2.1: PRINCIPLES OF SCIENTIFIC RESEARCH				
	True or False	1-5		
	Essay	1-2		
KNOW…the key terminology related to the principles of scientific research	Multiple Choice	2,6,12,16,18-22,35-36,38	1,8-9,23,37	7,10
	Short Answer	1,3	10	
UNDERSTAND…the five characteristics of quality scientific research	Multiple Choice	3,25	4,11,39-41	5
	Short Answer			
UNDERSTAND…how biases might influence the outcome of a study	Multiple Choice	25	29-31, 34	24,26-28,32-33
	Short Answer		2	
APPLY…the concepts of reliability and validity to examples	Multiple Choice			13-15,17
	Short Answer			
ANALYZE…whether anecdotes, authority figures, and common sense are reliably truthful sources of information	Multiple Choice	43	44-46	42,47
	Short Answer			4
MODULE 2.2: SCIENTIFIC RESEARCH DESIGNS				
	True or False	6-9		
	Essay	3		
KNOW…the key terminology related to research designs	Multiple Choice	49-51,54-55,65,74,82-83,88-89,93-94	95	75
	Short Answer		5	7
UNDERSTAND…what it means when variables are positively or negatively correlated	Multiple Choice	60-61,70	72	62-64,66-69,71
	Short Answer			
UNDERSTAND…how experiments help demonstrate cause-and-effect relationships	Multiple Choice	76-79	81	
	Short Answer	6		
APPLY…the terms and concepts of experimental methods to understand research examples	Multiple Choice		48	52,56-59,80, 84-87,90-92
	Short Answer			
ANALYZE…the pros and cons of descriptive, correlational, and experimental research designs	Multiple Choice	73	53	
	Short Answer			

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Topic		Factual	Conceptual	Applied
MODULE 2.3: ETHICS IN PSYCHOLOGICAL RESEARCH				
	True or False	10-15		
	Essay	4		
KNOW…the key terminology of research ethics	Multiple Choice	97	99-101	98,103
	Short Answer		8	
UNDERSTAND…the importance of reporting and storing data	Multiple Choice	109		
	Short Answer			
UNDERSTAND…the ethical guidelines that apply to research with humans or other species	Multiple Choice		107-108	106
	Short Answer			
APPLY…the ethical principles of scientific research to examples	Multiple Choice	96,104	105	
	Short Answer			
ANALYZE…the role of using deception in psychological research	Multiple Choice	102		
	Short Answer			
	Topic			
MODULE 2.4: A STATISTICAL PRIMER				
	True or False	16-20		
	Essay	5		
KNOW…the key terminology of statistics	Multiple Choice	110,112,114,116-117, 121, 123	111,122	118,124
	Short Answer		9	
UNDERSTAND…how and why psychologists use significance tests	Multiple Choice		125,127	
	Short Answer			
APPLY…your knowledge to interpret the most frequently used types of graphs	Multiple Choice	113		115
	Short Answer			
ANALYZE…the choice of central tendency statistics based on shape of the distribution	Multiple Choice	119-120		
	Short Answer			
ANALYZE…the conclusions that psychologists can reach based on significance tests	Multiple Choice			126
	Short Answer			

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CHAPTER QUIZ IN REVEL

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
Rationale: Once the sample has been studied, then the results may be generalized to the population as a whole.
Diff: 1
Skill: Factual
Objective: *Know the key terminology related to the principles of scientific research.*
APA SLO (2013): *2.1a--Identify basic biological, psychological, and social components of psychological explanations (e.g. inferences, observations, operational definitions, interpretations)*.

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
Rationale: These are inadvertent cues given off by the experimenter or the research context suggest how participants are expected to behave.
Diff: 2
Skill: Conceptual
Objective: *Understand how biases might influence the outcome of a study.*
APA SLO (2013): *2.4c--Define and explain the purpose of key research concepts that characterize psychological research (e.g. hypothesis, operational definition).*

3. Why it is 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
Rationale: This is an individual's story or testimony about an observation or event that is used to make a claim as evidence.
Diff: 3
Skill: Applied
Objective: *Analyze whether anecdotes, authority figures, and common sense are reliably truthful sources of information.*
APA SLO (2013): *2.1a--Identify basic biological, psychological, and social components of psychological explanations (e.g. inferences, observations, operational definitions, interpretations)*.

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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
Rationale: This: Correlation coefficients range from −1.0 to +1.0, but the closer it is to the absolute value of 1.0, the stronger the relationship.
Diff: 2
Skill: Conceptual
Objective: ***Understand what it means when variables are positively or negatively correlated.***
APA SLO (2013): ***2.4f--Explain why quantitative analysis is relevant for scientific problem solving.***

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
Rationale: These are the only designs that can provide strong evidence for cause-and-effect relationships.
Diff: 1
Skill: Conceptual
Objective: ***Understand how experiments help demonstrate cause and effect relationships.***
APA SLO (2013): ***2.4b--Discuss the value of experimental design (i.e. controlled comparisons) in justifying cause-effect relationships.***

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
Rationale: In these cases, the IRB serves as a third party that weighs the risks and benefits of research without being personally invested in the outcome.
Diff: 2
Skill: Conceptual
Objective: ***Understand the ethical guidelines that apply to research and with humans or other species.***
APA SLO (2013): ***3.1c—Discuss relevant ethical issues that reflect principles in the APA Code of Ethics.***

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7. The use of deception in psychological research is:
a. not a serious issue.
b. never acceptable.
c. generally acceptable when absolutely necessary for the research.
d. acceptable only in nonhuman research.
Answer: C
Module 2.3
Rationale: After participating in the research study, participants must undergo a full debriefing, meaning that the researchers should explain the true nature of the study, and especially the nature of and reason for the deception.
Diff: 3
Skill: Applied
Objective: ***Analyze the role of using deception in psychological research.***
APA SLO (2013): ***3.1c—Discuss relevant ethical issues that reflect principles in the APA Code of Ethics.***

8. Under which of the following circumstances would the mean be the best measure of central tendency to use?
a. The data have a normal distribution.
b. The data are positively skewed.
c. The data are negatively skewed.
d. The mean is always the best measure of central tendency
Answer: A
Module 2.4
Rationale: This is a symmetrical distribution with values clustered around a central, mean value.
Diff: 3
Skill: Applied
Objective: ***Analyze the choice of central tendency statistics based on the shape of the distribution.***
APA SLO (2013): ***2.4c----Define and explain the purpose of key research concepts that characterize psychological research (e.g. hypothesis, operational definition).***

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?
a. Median
b. Mode
c. Standard deviation
d. Mean
Answer: C
Module 2.4
Rationale: Think of it as an estimate of the average distance from the mean.
Diff: 1
Skill: Factual
Objective: ***Know the key terminology of statistics.***
APA SLO (2013): ***1.1a--Use basic psychological terminology, concepts, and theories in psychology to explain behavior and mental processes. 2.4c--Define and explain the purpose of key research concepts that characterize psychological research (e.g. hypothesis, operational definition).***

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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?
a. The difference between the scores for the two groups is probably due to random chance.
b. The difference between the scores for the two groups is likely due to their differing pretest activities, and did not happen by chance.
c. Students who are good at math prefer recess to watching a video.
d. Students who are good at math prefer watching a video to recess.
Answer: B
Module 2.4
Rationale: The difference is likely to have statistical significance**, which implies that the means of the groups are farther apart than you would expect them to be by random chance alone.**
Diff: 3
Skill: Applied
Objective: ***Analyze the conclusions that psychologists can reach based on significance tests.***
APA SLO (2013): ***1.1a--Use basic psychological terminology, concepts, and theories in psychology to explain behavior and mental processes.***

11. Ann is convinced that corporal punishment (e.g., spanking) is a good way to discipline a child because she knows a child whose behavior improved because of it. Whether or not you agree with her, Ann is using a flawed argument. Which type of evidence is she using?
a. Anecdotal
b. Objective
c. Generalizable
d. An appeal to authority
Answer: A
Module 2.1
Rationale: This is an individual's story or testimony about an observation or event that is used to make a claim as evidence.
Diff: 3
Skill: Applied
Objective: ***Analyze whether anecdotes, authority figures, and common sense are reliably truthful sources of information.***
APA SLO (2013): ***2.1b--Use psychology concepts to explain personal experiences and recognize the potential flaws in behavioral explanations based on simplistic, personal theories.***

12. Any property of an organism, event, or something else that can take on different values is called _____.
a. an operational definition
b. data
c. a variable
d. a case study
Answer: C
Module 2.1
Rationale: : This refers to the object, concept, or event being measured.
Diff: 1
Skill: Factual
Objective: ***Know the key terminology related to research designs.***
APA SLO (2013): ***2.4a--Describe research methods used by psychologists including their respective advantages and disadvantages.***

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13. Imagine Dr. Martin finds that a sense of humor is positively correlated with psychological well-being. From this, we can conclude that:
a. humor causes people to be healthier.
b. health causes people to be funnier.
c. people who have a good sense of humor tend to be healthier.
d. people who have a good sense of humor tend to be less healthy.
Answer: C
Module 2.2
Rationale: When two or more variables are positively correlated, their relationship is direct—they increase or decrease together.
Diff: 2
Skill: Conceptual
Objective: ***Understand what it means when variables are positively or negatively correlated.***
APA SLO (2013): ***2.4f--Explain why quantitative analysis is relevant for scientific problem solving.***

14. Claiming that something is true because 'it should be obvious" is really just _____.
a. anecdotal evidence
b. an appeal to common sense
c. an appeal to authority
d. generalizability
Answer: B
Module 2.1
Rationale: This is a claim that appears to be sound, but lacks supporting scientific evidence.
Diff: 3
Skill: Applied
Objective: ***Analyze whether anecdotes, authority figures, and common sense are reliably truthful sources of information.***
APA SLO (2013): ***2.1b--Use psychology concepts to explain personal experiences and recognize the potential flaws in behavioral explanations based on simplistic, personal theories.***

15. The _____ is a measure of variability around the mean of a distribution.
a. mean
b. median
c. mode
d. standard deviation
Answer: D
Module 2.4
Rationale: Think of it as an estimate of the average distance from the mean.
Diff: 1
Skill: Factual
Objective: ***Know the key terminology of statistics.***
APA SLO (2013): ***1.1a--Use basic psychological terminology, concepts, and theories in psychology to explain behavior and mental processes. 2.4c--Define and explain the purpose of key research concepts that characterize psychological research (e.g. hypothesis, operational definition).***

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MAIN TEST BANK

Multiple Choice Items

Module 2.1: Principles of Scientific Research

Know…

- the key terminology related to the principles of scientific research

Understand…

- the five characteristics of quality scientific research
- how biases might influence the outcome of a study

Apply…

- the concepts of reliability and validity to examples

Analyze…

- whether anecdotes, authority figures, and common sense are reliably truthful sources of information

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
Answer: D
Rationale: 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.
Diff: 1
Skill: Conceptual
Objective: *Know the key terminology related to the principles of scientific research.*
APA SLO (2008): *1.2—Demonstrate knowledge and understanding representing appropriate breadth and depth in selected content areas of psychology: theory and research representing general domains, the history of psychology, relevant levels of analysis, the overarching themes, and relevant ethical issues.*
APA SLO (2013): *1.1a--Use basic psychological terminology, concepts, and theories in psychology to explain behavior and mental processes.*
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
Answer: B
Rationale: Objectivity suggests that everyone should be able to agree on certain facts given the same tools, the same methods, and the same context.
Diff: 1
Skill: Factual
Objective: *Know the key terminology related to the principles of scientific research.*
APA SLO (2008): *2.1— Describe the basic characteristics of the science of psychology.*
APA SLO (2013): *2.1a--Identify basic biological, psychological, and social components of psychological explanations (e.g. inferences, observations, operational definitions, interpretations)*

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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
Answer: C
Rationale: According to the textbook, quality scientific research is 1. 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.
Diff: 1
Skill: Factual
Objective: ***Understand the five characteristics of quality scientific research.***
APA SLO (2008): ***2.1— Describe the basic characteristics of the science of psychology.***
APA SLO (2013): ***2.1a--Identify basic biological, psychological, and social components of psychological explanations (e.g. inferences, observations, operational definitions, interpretations)***

4. In order to make objective measurements, psychologists generally measure _____.
A) behavior
B) introspection
C) thoughts
D) feelings
Answer: A
Rationale: Objective measurements are measurements that, within an allowed margin of error, are consistent across instruments and observers. Because behavior 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.
Diff: 2
Skill: Conceptual
Objective: ***Understand the five characteristics of quality scientific research.***
APA SLO (2008): ***2.1— Describe the basic characteristics of the science of psychology.***
APA SLO (2013): ***2.1a--Identify basic biological, psychological, and social components of psychological explanations (e.g. inferences, observations, operational definitions, interpretations)***

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.
Answer: B
Rationale: 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.
Diff: 2
Skill: Applied
Objective: ***Understand the five characteristics of quality scientific research.***
APA SLO (2008): ***1.2—Demonstrate knowledge and understanding representing appropriate breadth and depth in selected content areas of psychology: theory and research representing general domains, the history of psychology, relevant levels of analysis, the overarching themes, and relevant ethical issues.***
APA SLO (2013): ***2.1a--Identify basic biological, psychological, and social components of psychological explanations (e.g. inferences, observations, operational definitions, interpretations)***

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6. In research, the object, concept, or event being measured is called a _____.
A) data unit
B) population
C) variable
D) sample
Answer: C
Rationale: 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 behavior and thought
Diff: 1
Skill: Factual
Objective: ***Know the key terminology related to the principles of scientific research.***
APA SLO (2008): ***2.1— Describe the basic characteristics of the science of psychology.***
APA SLO (2013): ***2.1a--Identify basic biological, psychological, and social components of psychological explanations (e.g. inferences, observations, operational definitions, interpretations)***

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
Answer: A
Rationale: 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 behavior and thought.
Diff: 1
Skill: Applied
Objective: ***Know the key terminology related to the principles of scientific research.***
APA SLO (2008): ***1.2—Demonstrate knowledge and understanding representing appropriate breadth and depth in selected content areas of psychology: theory and research representing general domains, the history of psychology, relevant levels of analysis, the overarching themes, and relevant ethical issues.***
APA SLO (2013): ***1.1a--Use basic psychological terminology, concepts, and theories in psychology to explain behavior and mental processes.***

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
Answer: C
Rationale: 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.
Diff: 1
Skill: Conceptual
Objective: ***Know the key terminology related to the principles of scientific research.***
APA SLO (2008): ***2.2—Explain different research methods used by psychologists.***
APA SLO (2013): ***2.4a--Describe research methods used by psychologists including their respective advantages and disadvantages.***

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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.
Answer: D
Rationale: 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.
Diff: 2
Skill: Conceptual
Objective: ***Know the key terminology related to the principles of scientific research.***
APA SLO (2008): ***1.2—Demonstrate knowledge and understanding representing appropriate breadth and depth in selected content areas of psychology: theory and research representing general domains, the history of psychology, relevant levels of analysis, the overarching themes, and relevant ethical issues.***
APA SLO (2013): ***1.1a--Use basic psychological terminology, concepts, and theories in psychology to explain behavior and mental processes.***

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 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
Answer: B
Rationale: 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.
Diff: 1
Skill: Applied
Objective: ***Know the key terminology related to the principles of scientific research.***
APA SLO (2008): ***1.2—Demonstrate knowledge and understanding representing appropriate breadth and depth in selected content areas of psychology: theory and research representing general domains, the history of psychology, relevant levels of analysis, the overarching themes, and relevant ethical issues.***
APA SLO (2013): ***1.1a--Use basic psychological terminology, concepts, and theories in psychology to explain behavior and mental processes.***

11. According to your text, which of the following have researchers concluded about the effects of meditation on stress?
A) Stress can be measured only by self-report.
B) Stress responses are best measured by changes in blood pressure.
C) Stress is most accurately assessed by measuring cortisol levels in saliva examples.
D) A good study would show that all three measures reflect the same changes in stress when people have (or do not have meditation training.
Answer: D
Rationale: Multiple measures of stress which all respond in the same way would provide the most robust ore reliable and valid evidence for a conclusion that meditation reduces stress responses.
Diff: 2
Skill: Conceptual
Objective: ***Understand the five characteristics of quality scientific research.***
APA SLO (2008): ***1.2—Demonstrate knowledge and understanding representing appropriate breadth and depth in selected content areas of psychology: theory and research representing general domains, the history of psychology, relevant levels of analysis, the overarching themes, and relevant ethical issues.***
APA SLO (2013): ***2.4e—Explain why conclusions in psychological projects must be both reliable and valid.***

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12. _____ is consistency of measurement.
A) Random assignment
B) Validity
C) Reliability
D) Confounding variable
Answer: C
Rationale: A measure demonstrates reliability when it provides consistent and stable answers across multiple observations and points in time.
Diff: 1
Skill: Factual
Objective: ***Know the key terminology related to the principles of scientific research.***
APA SLO (2008): ***1.2—Demonstrate knowledge and understanding representing appropriate breadth and depth in selected content areas of psychology: theory and research representing general domains, the history of psychology, relevant levels of analysis, the overarching themes, and relevant ethical issues.***
APA SLO (2013)***: 1.1a--Use basic psychological terminology, concepts, and theories in psychology to explain behavior and mental processes.***
% correct 67 a= 5 b= 23 c= 67 d= 5 *r* = .48

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
Answer: C
Rationale: 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.
Diff: 2
Skill: Applied
Objective: ***Apply the concepts of reliability and validity to examples.***
APA SLO (2008): ***1.2—Demonstrate knowledge and understanding representing appropriate breadth and depth in selected content areas of psychology: theory and research representing general domains, the history of psychology, relevant levels of analysis, the overarching themes, and relevant ethical issues.***
APA SLO (2013): ***1.1a--Use basic psychological terminology, concepts, and theories in psychology to explain behavior and mental processes.***

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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.
Answer: B
Rationale: 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).
Diff: 2
Skill: Applied
Objective: ***Apply the concepts of reliability and validity to examples.***
APA SLO (2008): ***1.2—Demonstrate knowledge and understanding representing appropriate breadth and depth in selected content areas of psychology: theory and research representing general domains, the history of psychology, relevant levels of analysis, the overarching themes, and relevant ethical issues.***
APA SLO (2013): ***1.1a--Use basic psychological terminology, concepts, and theories in psychology to explain behavior and mental processes.***

15. Brittany, a softball player who plays catcher for the local college, has thrown out base stealers at a 42, 39, and 41 percent rate over her three years. Her performance could be considered which of the following?
A) Valid
B) Invalid
C) Reliable
D) Not reliable
Answer: C
Rationale: 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.
Diff: 2
Skill: Applied
Objective: ***Apply the concepts of reliability and validity to examples.***
APA SLO (2008): ***1.2—Demonstrate knowledge and understanding representing appropriate breadth and depth in selected content areas of psychology: theory and research representing general domains, the history of psychology, relevant levels of analysis, the overarching themes, and relevant ethical issues.***
APA SLO (2013): ***1.1a--Use basic psychological terminology, concepts, and theories in psychology to explain behavior and mental processes.***

16. _____ is the extent to which a measure assesses what it claims to measure.
A) Operationalization
B) Reliability
C) Validity
D) Control group
Answer: C
Rationale: Validity refers to the degree to which an instrument or procedure actually measures what it claims to measure.
Diff: 1
Skill: Factual
Objective: ***Know the key terminology related to the principles of scientific research.***
APA SLO (2008): ***1.2—Demonstrate knowledge and understanding representing appropriate breadth and depth in selected content areas of psychology: theory and research representing general domains, the history of psychology, relevant levels of analysis, the overarching themes, and relevant ethical issues.***
APA SLO (2013): ***1.1a--Use basic psychological terminology, concepts, and theories in psychology to explain behavior and mental processes.***

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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.
Answer: B
Rationale: 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.
Diff: 3
Skill: Applied
Objective: ***Apply the concepts of reliability and validity to examples.***
APA SLO (2008): ***1.2—Demonstrate knowledge and understanding representing appropriate breadth and depth in selected content areas of psychology: theory and research representing general domains, the history of psychology, relevant levels of analysis, the overarching themes, and relevant ethical issues.***
APA SLO (2013): ***1.1a--Use basic psychological terminology, concepts, and theories in psychology to explain behavior and mental processes.***
% correct 36 a= 15 b= 36 c= 44 d= 5 *r* = .34

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
Answer: D
Rationale: In psychological research generalizability refers to the degree to which one set of results can be applied to other situations, individuals, or events.
Diff: 1
Skill: Factual
Objective: ***Know the key terminology related to the principles of scientific research.***
APA SLO (2008): ***1.2—Demonstrate knowledge and understanding representing appropriate breadth and depth in selected content areas of psychology: theory and research representing general domains, the history of psychology, relevant levels of analysis, the overarching themes, and relevant ethical issues.***
APA SLO (2013): ***1.1a--Use basic psychological terminology, concepts, and theories in psychology to explain behavior and mental processes.***

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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
Answer: B
Rationale: 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.
Diff: 1
Skill: Factual
Objective: ***Know the key terminology related to the principles of scientific research.***
APA SLO (2008): ***1.2—Demonstrate knowledge and understanding representing appropriate breadth and depth in selected content areas of psychology: theory and research representing general domains, the history of psychology, relevant levels of analysis, the overarching themes, and relevant ethical issues.***
APA SLO (2013): ***1.1a--Use basic psychological terminology, concepts, and theories in psychology to explain behavior and mental processes.***

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.
Answer: B
Rationale: 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.
Diff: 1
Skill: Factual
Objective: ***Know the key terminology related to the principles of scientific research.***
APA SLO (2008): ***1.2—Demonstrate knowledge and understanding representing appropriate breadth and depth in selected content areas of psychology: theory and research representing general domains, the history of psychology, relevant levels of analysis, the overarching themes, and relevant ethical issues.***
APA SLO (2013): ***1.1a--Use basic psychological terminology, concepts, and theories in psychology to explain behavior and mental processes.***

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.
Answer: D
Rationale: 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.
Diff: 2
Skill: Factual
Objective: ***Know the key terminology related to the principles of scientific research.***
APA SLO (2008): ***1.2—Demonstrate knowledge and understanding representing appropriate breadth and depth in selected content areas of psychology: theory and research representing general domains, the history of psychology, relevant levels of analysis, the overarching themes, and relevant ethical issues.***
APA SLO (2013): ***1.1a--Use basic psychological terminology, concepts, and theories in psychology to explain behavior and mental processes.***

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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
Answer: D
Rationale: 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.
Diff: 1
Skill: Factual
Objective: ***Know the key terminology related to the principles of scientific research.***
APA SLO (2008): ***1.2—Demonstrate knowledge and understanding representing appropriate breadth and depth in selected content areas of psychology: theory and research representing general domains, the history of psychology, relevant levels of analysis, the overarching themes, and relevant ethical issues.***
APA SLO (2013): ***1.1a--Use basic psychological terminology, concepts, and theories in psychology to explain behavior and mental processes.***

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.
Answer: A
Rationale: 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.
Diff: 2
Skill: Conceptual
Objective: ***Know the key terminology related to the principles of scientific research.***
APA SLO (2008): ***1.2—Demonstrate knowledge and understanding representing appropriate breadth and depth in selected content areas of psychology: theory and research representing general domains, the history of psychology, relevant levels of analysis, the overarching themes, and relevant ethical issues.***
APA SLO (2013): ***1.1a--Use basic psychological terminology, concepts, and theories in psychology to explain behavior and mental processes.***

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
Answer: D
Rationale: The Hawthorne effect is a term used to describe situations in which behavior changes as a result of being observed.
Diff: 2
Skill: Applied
Objective: ***Understand how biases might influence the outcome of a study.***
APA SLO (2008): ***2.4.e—Recognize that theoretical and sociocultural contexts as well as personal biases may shape research questions, design, data collection, analysis, and interpretation.***
APA SLO (2013): ***2.4c--Define and explain the purpose of key research concepts that characterize psychological research (e.g. hypothesis, operational definition).***

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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.
Answer: B
Rationale: When studying human behavior, 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 behavior of research participants.
Diff: 2
Skill: Factual
Objective: *Understand how biases might influence the outcome of a study.*
APA SLO (2008): *2.4.e—Recognize that theoretical and sociocultural contexts as well as personal biases may shape research questions, design, data collection, analysis, and interpretation.*
APA SLO (2013): *2.4c--Define and explain the purpose of key research concepts that characterize psychological research (e.g. hypothesis, operational definition).*

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
Answer: A
Rationale: Socially desirable responding occurs when research participants respond in ways that increase the chances that they will be viewed favorably. 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.
Diff: 1
Skill: Applied
Objective: *Understand how biases might influence the outcome of a study.*
APA SLO (2008): *2.4.e—Recognize that theoretical and sociocultural contexts as well as personal biases may shape research questions, design, data collection, analysis, and interpretation.*
APA SLO (2013): *2.4a--Describe research methods used by psychologists including their respective advantages and disadvantages.*

27. Alex, a freshman in college, wants to know how many of her dorm mates have tried marijuana, so she decides to survey everyone on her floor. Despite rumors 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 favorably.
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.
Answer: A
Rationale: Socially desirable responding occurs when research participants respond in ways that increase the chances that they will be viewed favorably. 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.
Diff: 2
Skill: Applied
Objective: *Understand how biases might influence the outcome of a study.*
APA SLO (2008): *2.4.e—Recognize that theoretical and sociocultural contexts as well as personal biases may shape research questions, design, data collection, analysis, and interpretation.*
APA SLO (2013): *2.4a--Describe research methods used by psychologists including their respective advantages and disadvantages.*

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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
Answer: D
Rationale: Demand characteristics are inadvertent cues given off by the experimenter or the experimental context that provide information about how participants are expected to behave.
Diff: 2
Skill: Applied
Objective: ***Understand how biases might influence the outcome of a study.***
APA SLO (2008): ***1.2—Demonstrate knowledge and understanding representing appropriate breadth and depth in selected content areas of psychology: theory and research representing general domains, the history of psychology, relevant levels of analysis, the overarching themes, and relevant ethical issues.***
APA SLO (2013): ***1.1a--Use basic psychological terminology, concepts, and theories in psychology to explain behavior and mental processes.***

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.
Answer: B
Rationale: 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.
Diff: 2
Skill: Conceptual
Objective: ***Understand how biases might influence the outcome of a study.***
APA SLO (2008): ***2.4.e—Recognize that theoretical and sociocultural contexts as well as personal biases may shape research questions, design, data collection, analysis, and interpretation.***
APA SLO (2013): ***2.4c--Define and explain the purpose of key research concepts that characterize psychological research (e.g. hypothesis, operational definition).***

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
Answer: D
Rationale: The placebo effect is a measureable and experienced improvement in health or behavior that cannot be attributable to a medication or treatment.
Diff: 1
Skill: Conceptual
Objective: ***Understand how biases might influence the outcome of a study.***
APA SLO (2008): ***1.2—Demonstrate knowledge and understanding representing appropriate breadth and depth in selected content areas of psychology: theory and research representing general domains, the history of psychology, relevant levels of analysis, the overarching themes, and relevant ethical issues.***
APA SLO (2013): ***1.1a--Use basic psychological terminology, concepts, and theories in psychology to explain behavior and mental processes.***
% correct 87 a= 8 b= 3 c= 3 d= 87 *r* = .41

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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
Answer: C
Rationale: The placebo effect is a measureable and experienced improvement in health or behavior that cannot be attributable to a medication or treatment.
Diff: 2
Skill: Conceptual
Objective: ***Understand how biases might influence the outcome of a study.***
APA SLO (2008): ***1.2—Demonstrate knowledge and understanding representing appropriate breadth and depth in selected content areas of psychology: theory and research representing general domains, the history of psychology, relevant levels of analysis, the overarching themes, and relevant ethical issues.***
APA SLO (2013): ***1.1a--Use basic psychological terminology, concepts, and theories in psychology to explain behavior and mental processes.***

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
Answer: C
Rationale: The placebo effect is a measureable and experienced improvement in health or behavior that cannot be attributable to a medication or treatment. In this example, subjects drinking coffee may act more anxious, 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.
Diff: 2
Skill: Applied
Objective: ***Understand how biases might influence the outcome of a study.***
APA SLO (2008): ***1.2—Demonstrate knowledge and understanding representing appropriate breadth and depth in selected content areas of psychology: theory and research representing general domains, the history of psychology, relevant levels of analysis, the overarching themes, and relevant ethical issues.***
APA SLO (2013): ***1.1a--Use basic psychological terminology, concepts, and theories in psychology to explain behavior and mental processes.***

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33. Lisa, a college student, had a great time at the party last night. She danced, sang karaoke, and even played the "Rock Band" video game—all behaviors 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 behavior?
A) The Rosenthal effect
B) Illusory correlations
C) The nocebo effect
D) The placebo effect
Answer: D
Rationale: The placebo effect is a measureable and experienced improvement in health or behavior that cannot be attributable to a medication or treatment. Lisa's change in behavior after drinking the punch is similar to the reaction of patients when given a placebo that they expect to improve their health.
Diff: 2
Skill: Applied
Objective: ***Understand how biases might influence the outcome of a study.***
APA SLO (2008): ***1.2—Demonstrate knowledge and understanding representing appropriate breadth and depth in selected content areas of psychology: theory and research representing general domains, the history of psychology, relevant levels of analysis, the overarching themes, and relevant ethical issues.***
APA SLO (2013): ***1.1a--Use basic psychological terminology, concepts, and theories in psychology to explain behavior and mental processes.***

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
Answer: B
Rationale: Socially desirable responding occurs when research participants respond in ways that increase the chances that they will be viewed favorably. 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.
Diff: 2
Skill: Conceptual
Objective: ***Understand how biases might influence the outcome of a study.***
APA SLO (2008): ***1.2—Demonstrate knowledge and understanding representing appropriate breadth and depth in selected content areas of psychology: theory and research representing general domains, the history of psychology, relevant levels of analysis, the overarching themes, and relevant ethical issues.***
APA SLO (2013): ***1.1a--Use basic psychological terminology, concepts, and theories in psychology to explain behavior and mental processes.***

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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
Answer: B
Rationale: 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.
Diff: 1
Skill: Factual
Objective: ***Know the key terminology related to the principles of scientific research***
APA SLO (2008): ***1.2—Demonstrate knowledge and understanding representing appropriate breadth and depth in selected content areas of psychology: theory and research representing general domains, the history of psychology, relevant levels of analysis, the overarching themes, and relevant ethical issues.***
APA SLO (2013): ***1.1a--Use basic psychological terminology, concepts, and theories in psychology to explain behavior and mental processes.***

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
Answer: D
Rationale: In a double-blind study, neither the participant nor the experimenter knows the exact treatment for any individual.
Diff: 1
Skill: Factual
Objective: ***Know the key terminology related to the principles of scientific research***
APA SLO (2008): 2.2—*Explain different research methods used by psychologists.*
APA SLO (2013): ***2.4a--Describe research methods used by psychologists including their respective advantages and disadvantages.***

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
Answer: D
Rationale: In a double-blind study, neither the participant nor the experimenter knows the exact treatment for any individual.
Diff: 1
Skill: Conceptual
Objective: ***Know the key terminology related to the principles of scientific research***
APA SLO (2008): 2.2—*Explain different research methods used by psychologists.*
APA SLO (2013): ***2.4a--Describe research methods used by psychologists including their respective advantages and disadvantages.***

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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
Answer: C
Rationale: 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.
Diff: 1
Skill: Factual
Objective: ***Know the key terminology related to the principles of scientific research***
APA SLO (2008): ***2.1—Describe the basic characteristics of the science of psychology.***
APA SLO (2013): ***2.1a--Identify basic biological, psychological, and social components of psychological explanations (e.g. inferences, observations, operational definitions, interpretations)***
% correct 79 a= 5 b= 5 c= 79 d= 11 *r* = .55

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.
Answer: B
Rationale: 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.
Diff: 2
Skill: Conceptual
Objective: ***Understand the five characteristics of quality scientific research.***
APA SLO (2008): ***2.1—Describe the basic characteristics of the science of psychology.***
APA SLO (2013): ***2.1a--Identify basic biological, psychological, and social components of psychological explanations (e.g. inferences, observations, operational definitions, interpretations)***

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.
Answer: A
Rationale: 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.
Diff: 3
Skill: Conceptual
Objective: ***Understand the five characteristics of quality scientific research.***
APA SLO (2008): ***2.1—Describe the basic characteristics of the science of psychology.***
APA SLO (2013): ***2.1a--Identify basic biological, psychological, and social components of psychological explanations (e.g. inferences, observations, operational definitions, interpretations)***

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41. The main purpose of replicating studies is to:
A) keep the scientific community aware of the results.
B) renew drug and technology patents based on the research.
C) ensure that the results are correct.
D) secure extra funding.
Answer: C
Rationale: 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.
Diff: 2
Skill: Conceptual
Objective: ***Understand the five characteristics of quality scientific research.***
APA SLO (2008): ***2.1—Describe the basic characteristics of the science of psychology.***
APA SLO (2013): ***2.1a--Identify basic biological, psychological, and social components of psychological explanations (e.g. inferences, observations, operational definitions, interpretations)***

42 Chen believes that red cars are more likely to be stolen than non-red cars because 1 week after she bought a red car, it was stolen. This is an example of which type of evidence?
A) anecdotal
B) falsified
C) common-sense
D) authoritative
Answer: A
Rationale: 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 base scientific conclusions on.
Diff: 1
Skill: Applied
Objective: ***Analyze whether anecdotes, authority figures, and common sense are reliably truthful sources of information***
APA SLO (2008): ***2.1—Describe the basic characteristics of the science of psychology.***
APA SLO (2013): ***2.1a--Identify basic biological, psychological, and social components of psychological explanations (e.g. inferences, observations, operational definitions, interpretations)***

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
Answer: A
Rationale: 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 base scientific conclusions on.
Diff: 1
Skill: Factual
Objective: ***Analyze whether anecdotes, authority figures, and common sense are reliably truthful sources of information***
APA SLO (2008): ***2.1—Describe the basic characteristics of the science of psychology.***
APA SLO (2013): ***2.1a--Identify basic biological, psychological, and social components of psychological explanations (e.g. inferences, observations, operational definitions, interpretations)***

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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.
Answer: D
Rationale: 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 base scientific conclusions on, even if the basic facts of the story are correct.
Diff: 2
Skill: Conceptual
Objective: ***Analyze whether anecdotes, authority figures, and common sense are reliably truthful sources of information***
APA SLO (2008): ***2.1—Describe the basic characteristics of the science of psychology.***
APA SLO (2013): ***2.1a--Identify basic biological, psychological, and social components of psychological explanations (e.g. inferences, observations, operational definitions, interpretations)***

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
Answer: D
Rationale: 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.
Diff: 2
Skill: Conceptual
Objective: ***Analyze whether anecdotes, authority figures, and common sense are reliably truthful sources of information***
APA SLO (2008): ***2.1—Describe the basic characteristics of the science of psychology.***
APA SLO (2013): ***2.1a--Identify basic biological, psychological, and social components of psychological explanations (e.g. inferences, observations, operational definitions, interpretations)***

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.
Answer: C
Rationale: 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.
Diff: 2
Skill: Conceptual
Objective: ***Analyze whether anecdotes, authority figures, and common sense are reliably truthful sources of information***
APA SLO (2008): ***2.1—Describe the basic characteristics of the science of psychology.***
APA SLO (2013): ***2.1b--Use psychology concepts to explain personal experiences and recognize the potential flaws in behavioral explanations based on simplistic, personal theories.***

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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.
Answer: C
Rationale: 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.
Diff: 2
Skill: Applied
Objective: ***Analyze whether anecdotes, authority figures, and common sense are reliably truthful sources of information***
APA SLO (2008): ***2.1—Describe the basic characteristics of the science of psychology.***
APA SLO (2013): ***2.1b--Use psychology concepts to explain personal experiences and recognize the potential flaws in behavioral explanations based on simplistic, personal theories.***

Module 2.2: Scientific Research Designs

Know…

- the key terminology related to research designs

Understand…

- what it means when variables are positively or negatively correlated
- how experiments help demonstrate cause-and-effect relationships

Apply…

- the terms and concepts of experimental methods to research examples

Analyze...

- the pros and cons of descriptive, correlational, and experimental research designs

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?"
Answer: B
Rationale: 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.
Diff: 2
Skill: Conceptual
Objective: ***Apply the terms and concepts of experimental methods to research examples.***
APA SLO (2008): ***2.1—Describe the basic characteristics of the science of psychology.***
APA SLO (2013): ***2.1a--Identify basic biological, psychological, and social components of psychological explanations (e.g. inferences, observations, operational definitions, interpretations)***

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49. _____ research does not an 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
Answer: A
Rationale: 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
Skill: Factual
Objective: *Know the key terminology related to research designs.*
APA SLO (2008): *2.2—Explain different research methods used by psychologists.*
APA SLO (2013): *2.4a--Describe research methods used by psychologists including their respective advantages and disadvantages.*

50. Which of the following is NOT a descriptive research method?
A) case study
B) naturalistic observation
C) experiment
D) survey
Answer: C
Rationale: 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.
Diff: 2
Skill: Factual
Objective: *Know the key terminology related to research designs.*
APA SLO (2008): *2.2—Explain different research methods used by psychologists.*
APA SLO (2013): *2.4a--Describe research methods used by psychologists including their respective advantages and disadvantages.*

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
Answer: A
Rationale: A case study is an in-depth report about the details of a specific case.
Diff: 1
Skill: Factual
Objective: *Know the key terminology related to research designs.*
APA SLO (2008): *2.2—Explain different research methods used by psychologists.*
APA SLO (2013): *2.4a--Describe research methods used by psychologists including their respective advantages and disadvantages.*
% correct 97 a= 97 b= 4 c= 0 d= 0 *r* = .21

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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
Answer: D
Rationale: 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.
Diff: 2
Skill: Applied
Objective: ***Apply terms and concepts of experimental methods to research examples.***
APA SLO (2008): ***2.2—Explain different research methods used by psychologists.***
APA SLO (2013): ***2.4a--Describe research methods used by psychologists including their respective advantages and disadvantages.***

53. Why is it difficult to make generalizations based on the results of case study research?
A) Because case study research is, by definition, immune to the error of making generalizations.
B) Because 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) Because the statistics involved in case study research do not allow one to draw larger conclusions about a population.
Answer: C
Rationale: 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.
Diff: 3
Skill: Conceptual
Objective: ***Analyze the pros and cons of descriptive, correlational, and experimental research designs.***
APA SLO (2008): ***2.2.b—Articulate strengths and limitations of various research designs.***
APA SLO (2013): ***2.4e--Explain why conclusions in psychological projects must be both reliable and valid.***

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 behavior in its natural context.
C) It is basically the same process as objective introspection.
D) It involves observing behavior in the lab without taking formal notes or using technological equipment to measure the experimental findings.
Answer: B
Rationale: When psychologists engage in naturalistic observation, they unobtrusively observe and record behavior 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.
Diff: 1
Skill: Factual
Objective: ***Know the key terminology related to research designs.***
APA SLO (2008): ***2.2—Explain different research methods used by psychologists.***
APA SLO (2013): ***2.4a--Describe research methods used by psychologists including their respective advantages and disadvantages.***
% correct 90 a= 7 b= 90 c= 4 d= 0 *r* = .23

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55. Watching behavior in real-world settings is known as _____.
A) a case study
B) a correlation design
C) naturalistic observation
D) a self-report
Answer: C
Rationale: When psychologists engage in naturalistic observation, they unobtrusively observe and record behavior as it occurs in the subject's natural environment.
Diff: 1
Skill: Factual
Objective: ***Know the key terminology related to research designs.***
APA SLO (2008): ***2.2—Explain different research methods used by psychologists.***
APA SLO (2013): ***2.4a--Describe research methods used by psychologists including their respective advantages and disadvantages.***

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
Answer: B
Rationale: When psychologists engage in naturalistic observation, as in this example, they unobtrusively observe and record behavior 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.
Diff: 2
Skill: Applied
Objective: ***Apply terms and concepts of experimental methods to research examples.***
APA SLO (2008): ***2.2—Explain different research methods used by psychologists.***
APA SLO (2013): ***2.4a--Describe research methods used by psychologists including their respective advantages and disadvantages.***

57. A researcher is interested in determining how frequently bullying behavior 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
Answer: D
Rationale: Naturalistic observation is generally the best method for studying behavior 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.
Diff: 2
Skill: Applied
Objective: ***Apply terms and concepts of experimental methods to research examples.***
APA SLO (2008): ***2.2.a—Describe how various research designs address different types of questions and hypotheses.***
APA SLO (2013): ***2.4c--Define and explain the purpose of key research concepts that characterize psychological research (e.g. hypothesis, operational definition).***

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58. Dr. Potter, an English professor, is curious about his students' attitudes toward one of his favorite books. What research method is he most likely to use to gather this information?
A) case study
B) survey
C) experiment
D) correlational
Answer: B
Rationale: 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.
Diff: 2
Skill: Applied
Objective: ***Apply terms and concepts of experimental methods to research examples.***
APA SLO (2008): ***2.2.a—Describe how various research designs address different types of questions and hypotheses.***
APA SLO (2013): ***2.4c--Define and explain the purpose of key research concepts that characterize psychological research (e.g. hypothesis, operational definition***
% correct 73 a= 13 b= 73 c= 3 d= 8 *r* = .21

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
Answer: B
Rationale: 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.
Diff: 2
Skill: Applied
Objective: ***Apply terms and concepts of experimental methods to research examples.***
APA SLO (2008): ***2.2.a—Describe how various research designs address different types of questions and hypotheses.***
APA SLO (2013): ***2.4c--Define and explain the purpose of key research concepts that characterize psychological research (e.g. hypothesis, operational definition***
% correct 93 a= 0 b= 93 c= 7 d= 0 *r* = .22

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.
Answer: B
Rationale: 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.
Diff: 1
Skill: Factual
Objective: ***Understand what it means when variables are positively or negatively correlated.***
APA SLO (2008): ***2.2.c—Distinguish the nature of designs that permit causal inferences from those that do not.***
APA SLO (2013): ***2.4b--Discuss the value of experimental design (i.e. controlled comparisons) in justifying cause-effect relationships.***

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61. Which of these is a type of correlation discussed in your text?
A) Normal
B) Parallel
C) Skewed
D) Negative
Answer: D
Rationale: 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).
Diff: 1
Skill: Factual
Objective: ***Understand what it means when variables are positively or negatively correlated.***
APA SLO (2008): ***1.2—Demonstrate knowledge and understanding representing appropriate breadth and depth in selected content areas of psychology: theory and research representing general domains, the history of psychology, relevant levels of analysis, the overarching themes, and relevant ethical issues.***
APA SLO (2013): ***1.1a--Use basic psychological terminology, concepts, and theories in psychology to explain behavior and mental processes. 2.4a--Describe research methods used by psychologists including their respective advantages and disadvantages.***
% correct 74 a= 10 b= 15 c= 0 d= 74 *r* = .29

62. As the average daily temperature in Des Moines, Iowa, *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
Answer: B
Rationale: When an increase in one variable is associated with a decrease in another (or vice versa) the two variable are said to be negatively correlated.
Diff: 2
Skill: Applied
Objective: ***Understand what it means when variables are positively or negatively correlated.***
APA SLO (2008): ***2.3.a—Interpret basic statistical results.***
APA SLO (2013): ***2.4f--Explain why quantitative analysis is relevant for scientific problem solving.***
% correct 52 a= 7 b= 52 c= 31 d= 10 *r* = .68

63. Hopefully, 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
Answer: C
Rationale: 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.
Diff: 2
Skill: Applied
Objective: ***Understand what it means when variables are positively or negatively correlated.***
APA SLO (2008): ***2.3.a—Interpret basic statistical results.***
APA SLO (2013): ***2.4f--Explain why quantitative analysis is relevant for scientific problem solving.***

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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.
Answer: B
Rationale: 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).
Diff: 3
Skill: Applied
Objective: ***Understand what it means when variables are positively or negatively correlated.***
APA SLO (2008): ***2.3.a—Interpret basic statistical results.***
APA SLO (2013): ***2.4f--Explain why quantitative analysis is relevant for scientific problem solving.***

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
Answer: D
Rationale: 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.
Diff: 1
Skill: Factual
Objective: ***Know key terminology related to research designs.***
APA SLO (2008): ***1.2—Demonstrate knowledge and understanding representing appropriate breadth and depth in selected content areas of psychology: theory and research representing general domains, the history of psychology, relevant levels of analysis, the overarching themes, and relevant ethical issues.***
APA SLO (2013): ***2.4a--Describe research methods used by psychologists including their respective advantages and disadvantages.***

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
Answer: B
Rationale: 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.
Diff: 2
Skill: Applied
Objective: ***Understand what it means when variables are positively or negatively correlated.***
APA SLO (2008): ***2.3.a—Interpret basic statistical results.***
APA SLO (2013): ***2.4f--Explain why quantitative analysis is relevant for scientific problem solving.***
% correct 82 a= 0 b= 82 c=3 d= 15 *r* = .46

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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
Answer: C
Rationale: 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.
Diff: 2
Skill: Applied
Objective: ***Understand what it means when variables are positively or negatively correlated.***
APA SLO (2008): ***2.3.a—Interpret basic statistical results.***
APA SLO (2013): ***2.4f--Explain why quantitative analysis is relevant for scientific problem solving.***

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
Answer: A
Rationale: If there is little to no pattern in the relationship between two variables, the correlation coefficient will be close to zero.
Diff: 2
Skill: Applied
Objective: ***Understand what it means when variables are positively or negatively correlated.***
APA SLO (2008): ***2.3.a—Interpret basic statistical results.***
APA SLO (2013): ***2.4f--Explain why quantitative analysis is relevant for scientific problem solving.***

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
Answer: A
Rationale: 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.
Diff: 2
Skill: Applied
Objective: ***Understand what it means when variables are positively or negatively correlated.***
APA SLO (2008): ***2.3.a—Interpret basic statistical results.***
APA SLO (2013): ***2.4f--Explain why quantitative analysis is relevant for scientific problem solving.***

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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.
Answer: D
Rationale: 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.
Diff: 2
Skill: Factual
Objective: ***Understand what it means when variables are positively or negatively correlated.***
APA SLO (2008): ***2.3.a—Interpret basic statistical results.***
APA SLO (2013): ***2.4f--Explain why quantitative analysis is relevant for scientific problem solving.***

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 = +.11
B) Degree of exposure to lead and IQ scores in children, correlation coefficient = –.12
C) Hours of exposure to media violence and aggressive behavior, correlation coefficient = +.31
D) Number of cigarettes smoked per day and incidence of lung cancer, correlation coefficient = +.39
Answer: A
Rationale: 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 –.12 is weaker than +.11, the absolute value of .11 is less than .12.
Diff: 2
Skill: Applied
Objective: ***Understand what it means when variables are positively or negatively correlated.***
APA SLO (2008): ***2.3.a—Interpret basic statistical results.***
APA SLO (2013): ***2.4f--Explain why quantitative analysis is relevant for scientific problem solving.***

72. Which of the following correlation coefficients represents the strongest degree of relation between two variables?
A) +.19
B) –.25
C) +.43
D) –.47
Answer: D
Rationale: 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 +.43 is stronger than –.47, the absolute value of .43 is less than .47.
Diff: 2
Skill: Conceptual
Objective: ***Understand what it means when variables are positively or negatively correlated.***
APA SLO (2008): ***2.3.a—Interpret basic statistical results.***
APA SLO (2013): ***2.4f--Explain why quantitative analysis is relevant for scientific problem solving.***

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73. Correlational research designs are NOT appropriate for purposes of _____.
A) causation
B) description
C) prediction
D) describing relationships
Answer: A
Rationale: 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.
Diff: 2
Skill: Factual
Objective: ***Analyze the pros and cons of descriptive, correlational, and experimental research designs***
APA SLO (2008): ***2.2.c—Distinguish the nature of designs that permit causal inferences from those that do not.***
APA SLO (2013): ***2.4e--Explain why conclusions in psychological projects must be both reliable and valid.***
% correct 77 a= 77 b= 10 c= 7 d= 7 *r* = .53

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
Answer: B
Rationale: Illusory correlations are relationships that really only exist in the mind, rather than reality.
Diff: 1
Skill: Factual
Objective: ***Know key terminology related to research designs.***
APA SLO (2008): ***1.2—Demonstrate knowledge and understanding representing appropriate breadth and depth in selected content areas of psychology: theory and research representing general domains, the history of psychology, relevant levels of analysis, the overarching themes, and relevant ethical issues.***
APA SLO (2013): ***1.1a--Use basic psychological terminology, concepts, and theories in psychology to explain behavior and mental processes. 2.4a--Describe research methods used by psychologists including their respective advantages and disadvantages.***

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
Answer: D
Rationale: Illusory correlations are relationships that really only exist in the mind, rather than reality.
Diff: 2
Skill: Applied
Objective: ***Know key terminology related to research designs.***
APA SLO (2008): ***1.2—Demonstrate knowledge and understanding representing appropriate breadth and depth in selected content areas of psychology: theory and research representing general domains, the history of psychology, relevant levels of analysis, the overarching themes, and relevant ethical issues.***
APA SLO (2013): ***1.1a--Use basic psychological terminology, concepts, and theories in psychology to explain behavior and mental processes.***

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76. The only research design that allows one to make inferences on cause-and-effect is the _____ design.
A) case study
B) correlational
C) experimental
D) naturalistic observation
Answer: C
Rationale: 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 casual inferences.
Diff: 2 -46
Skill: Factual
Objective: ***Understand how experiments help demonstrate cause-and-effect relationships.***
APA SLO (2008): ***2.2.c—Distinguish the nature of designs that permit causal inferences from those that do not.***
APA SLO (2013): 2.4b--Discuss the value of experimental design (i.e. controlled comparisons) in justifying cause-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.
Answer: D
Rationale: 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.
Diff: 2
Skill: Factual
Objective: ***Understand how experiments help demonstrate cause-and-effect relationships.***
APA SLO (2008): ***2.2—Explain different research methods used by psychologists.***
APA SLO (2013): ***2.4a--Describe research methods used by psychologists including their respective advantages and disadvantages.***

78. Which of the following aspects is critical the experimental but not correlational design?
A) the ability to test predictions.
B) the use of variables.
C) the use of operational definitions.
D) random assignment.
Answer: D
Rationale: 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.
Diff: 2 -46
Skill: Factual
Objective: ***Understand how experiments help demonstrate cause-and-effect relationships.***
APA SLO (2008): ***2.2—Explain different research methods used by psychologists.***
APA SLO (2013): ***2.4a—Describe research methods used by psychologists including their respective advantages and disadvantages.***

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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
Answer: C
Rationale: The experimental method is the only type of research that involves random assignment and the manipulation of one or more independent variables.
Diff: 1
Skill: Factual
Objective: ***Understand how experiments help demonstrate cause-and-effect relationships.***
APA SLO (2008): ***2.2—Explain different research methods used by psychologists.***
APA SLO (2013): ***2.4a—Describe research methods used by psychologists including their respective advantages and disadvantages.***
% correct 87 a= 8 b= 3 c= 87 d= 3 *r* = .39

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.
Answer: A
Rationale: 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.
Diff: 3
Skill: Applied
Objective: ***Apply the terms and concepts of experimental methods to research examples.***
APA SLO (2008): ***2.2—Explain different research methods used by psychologists.***
APA SLO (2013): ***2.4a—Describe research methods used by psychologists including their respective advantages and disadvantages.***

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) Because it is important to treat all research participants equally so that they feel that they are not being manipulated.
B) Because research ethics forbid any experiment to take place when the participant groups are fundamentally different from each other.
C) So that no major differences between the groups unduly bias the results of the experiment.
D) Because this is generally what happens when participants are allowed to choose their own groups.
Answer: C
Rationale: 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.
Diff: 2
Skill: Conceptual
Objective: ***Understand how experiments help demonstrate cause-and-effect relationships.***
APA SLO (2008): ***2.2—Explain different research methods used by psychologists.***
APA SLO (2013): ***2.4a—Describe research methods used by psychologists including their respective advantages and disadvantages.***

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82. The _____ variable is what the experimenter manipulates (or varies).
A) control
B) dependent
C) operational
D) independent
Answer: D
Rationale: 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 the variable which is the observation or measurement that is recorded during the experiment and subsequently compared across all groups. The goal of an experiment is to determine if manipulating the independent variable affects the dependent variable.
Diff: 1
Skill: Factual
Objective: ***Know the key terminology related to research designs.***
APA SLO (2008): ***2.2—Explain different research methods used by psychologists.***
APA SLO (2013): ***2.4a—Describe research methods used by psychologists including their respective advantages and disadvantages.***
% correct 69 a= 0 b= 26 c= 5 d= 69 *r* = .26

83. The variable that an experimenter assesses or measures is called the _____.
A) causal variable
B) confounding variable
C) dependent variable
D) independent variable
Answer: C
Rationale: In an experiment, the dependent variable is the variable which 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.
Diff: 1
Skill: Factual
Objective: ***Know the key terminology related to research designs.***
APA SLO (2008): ***2.2—Explain different research methods used by psychologists.***
APA SLO (2013): ***2.4a—Describe research methods used by psychologists including their respective advantages and disadvantages.***

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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 College of Liberal Arts and Sciences to have the posters while others do not. None of the remaining four academic colleges have any posters placed in their classrooms. What is the independent variable in this study?
A) academic college
B) classroom wall hangings
C) gender of the student
D) grade point average
Answer: B
Rationale: In an experiment, the independent variable is the variable that the experimenter manipulates to distinguish between the different groups and 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.
Diff: 3
Skill: Applied
Objective: ***Apply the terms and concepts of experimental methods to research examples.***
APA SLO (2008): ***2.2—Explain different research methods used by psychologists.***
APA SLO (2013): ***2.4a—Describe research methods used by psychologists including their respective advantages and disadvantages.***

85. A medical doctor believes that the presence of aromatherapy candles will reduce the anxiety of first-time mothers-to-be during labor 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 labor
B) number of previous birthing experiences
C) room environment
D) satisfaction with hospital care
Answer: C
Rationale: In an experiment, the independent variable is the variable that the experimenter manipulates to distinguish between the different groups and 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.
Diff: 3
Skill: Applied
Objective: ***Apply the terms and concepts of experimental methods to research examples.***
APA SLO (2008): ***2.2—Explain different research methods used by psychologists.***
APA SLO (2013): ***2.4a—Describe research methods used by psychologists including their respective advantages and disadvantages.***

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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
Answer: A
Rationale: In an experiment, the independent variable is the variable that the experimenter manipulates to distinguish between the different groups and 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.
Diff: 2
Skill: Applied
Objective: ***Apply the terms and concepts of experimental methods to research examples.***
APA SLO (2008): ***2.2—Explain different research methods used by psychologists.***
APA SLO (2013): ***2.4a—Describe research methods used by psychologists including their respective advantages and disadvantages.***

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.
Answer: A
Rationale: 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.
Diff: 1
Skill: Applied
Objective: ***Apply terms and concepts of experimental methods to research examples.***
APA SLO (2008): ***2.3—Evaluate the appropriateness of conclusions derived from psychological research.***
APA SLO (2013): ***2.4e--Explain why conclusions in psychological projects must be both reliable and valid.***
% correct 54 a= 54 b= 13 c= 31 d= 3 *r* = .21

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88. In an experiment, a researcher wants to avoid the presence of _____.
A) confounding variables
B) dependent variables
C) independent variables
D) random assignment
Answer: A
Rationale: 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.
Diff: 1
Skill: Factual
Objective: ***Know the key terminology related to research designs.***
APA SLO (2008): ***2.2—Explain different research methods used by psychologists.***
APA SLO (2013): ***2.4a—Describe research methods used by psychologists including their respective advantages and disadvantages.***

89. In an experiment, the _____ group receives no manipulation.
A) control
B) dependent
C) independent
D) experimental
Answer: A
Rationale: A control group is the group that does not receive the treatment and therefore serves as a comparison for the experimental group(s).
Diff: 1
Skill: Factual
Objective: ***Know the key terminology related to research designs.***
APA SLO (2008): ***2.2—Explain different research methods used by psychologists.***
APA SLO (2013): ***2.4a—Describe research methods used by psychologists including their respective advantages and disadvantages.***

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
Answer: B
Rationale: 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
Skill: Applied
Objective: ***Apply the terms and concepts of experimental methods to research examples.***
APA SLO (2008): ***2.2—Explain different research methods used by psychologists.***
APA SLO (2013): ***2.4a—Describe research methods used by psychologists including their respective advantages and disadvantages.***

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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
Answer: B
Rationale: 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.
Diff: 2
Skill: Applied
Objective: ***Apply the terms and concepts of experimental methods to research examples.***
APA SLO (2008): ***2.2—Explain different research methods used by psychologists.***
APA SLO (2013): ***2.4a—Describe research methods used by psychologists including their respective advantages and disadvantages.***

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.
Answer: D
Rationale: 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 the subjects with the new technique to. 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.
Diff: 2
Skill: Applied
Objective: ***Apply the terms and concepts of experimental methods to research examples.***
APA SLO (2008): ***2.2—Explain different research methods used by psychologists.***
APA SLO (2013): ***2.4a—Describe research methods used by psychologists including their respective advantages and disadvantages.***

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
Answer: C
Rationale: 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.
Diff: 1
Skill: Factual
Objective: ***Know the key terminology related to research designs.***
APA SLO (2008): ***2.2—Explain different research methods used by psychologists.***
APA SLO (2013): ***2.4a—Describe research methods used by psychologists including their respective advantages and disadvantages.***

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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
Answer: A
Rationale: 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.
Diff: 2
Skill: Factual
Objective: ***Know the key terminology related to research designs.***
APA SLO (2008): ***2.2—Explain different research methods used by psychologists.***
APA SLO (2013): ***2.4a—Describe research methods used by psychologists including their respective advantages and disadvantages.***

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
Answer: C
Rationale: 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 made sleep deprived. However, it is not possible to randomly assign participants to be male or female.
Diff: 3
Skill: Conceptual
Objective: ***Know the key terminology related to research designs.***
APA SLO (2008): ***2.2—Explain different research methods used by psychologists.***
APA SLO (2013): ***2.4a—Describe research methods used by psychologists including their respective advantages and disadvantages.***

Module 2.3: Ethics in Psychological Research

Know…

- the key terminology of research ethics

Understand…

- the importance of reporting and storing data
- the ethical guidelines that apply to research with humans or other species

Apply…

- the ethical principles of scientific research to examples

Analyze...

- the role of using deception in psychological research

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96. The Tuskegee Syphilis Study 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 IRBs sometimes cause more harm than good.
Answer: B
Rationale: In 1932, the United States Public Health Service began a decades-long study of the long-term effects of syphilis, in which vulnerable participants were lied to about having syphilis and left untreated. Scientists now recognize that this was an unethical study.
Diff: 2
Skill: Factual
Objective: ***Apply the ethical principles of scientific research to examples.***
APA SLO (2008): 2.5—*Follow the APA Code of Ethics in the treatment of human and nonhuman participants in the design, data collection, interpretation, and reporting of psychological research.*
APA SLO (2013): *3.1b--Identify obvious violations of ethical standards in psychological contexts*

97. What is the purpose of an institutional review 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
Answer: A
Rationale: An Institutional Review Board (IRB) is a committee of researchers and officials at an institution charged with the protection of human research participants. The IRB 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.
Diff: 2
Skill: Factual
Objective: ***Know the key terminology of research ethics*.**
APA SLO (2008): *2.5—Follow the APA Code of Ethics in the treatment of human and nonhuman participants in the design, data collection, interpretation, and reporting of psychological research.*
APA SLO (2013): *3.1d--Define the role of the institutional review board (IRB)*

98. Kendra serves on a committee whose job is to review proposed psychology studies. The committee refuses to approve one study because they feel 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) institutional review board
Answer: D
Rationale: An Institutional Review Board (IRB) is a committee of researchers and officials at an institution charged with the protection of human research participants. The IRB 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.
Diff: 2
Skill: Applied
Objective: ***Know the key terminology of research ethics.***
APA SLO (2008): *2.5—Follow the APA Code of Ethics in the treatment of human and nonhuman participants in the design, data collection, interpretation, and reporting of psychological research.*
APA SLO (2013): *3.1d--Define the role of the institutional review board (IRB)*

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99. Which of the following is true about studies that ask participant to place a hand in a tub of freezing water, which can cause some discomfort or even pain?
A) This practice is classified as a physical risk.
B) Studies using this procedure are unethical.
C) Stress and pain from this procedure is typically short term and can be an acceptable risk.
D) Studies which cause pain are always acceptable.
Answer: C
Rationale: Making subjects voluntarily submerge their hand in freezing water can be ethically used when participants engage with fully informed consent and know they can stop the procedure at any time. While it can cause physical and psychological stress, this tends to be short term. Therefore, the benefits of a study must be weighed against the risk to participants.
Diff: 2
Skill: Conceptual
Objective: ***Know the key terminology of research ethics.***
APA SLO (2008): ***2.5—Follow the APA Code of Ethics in the treatment of human and nonhuman participants in the design, data collection, interpretation, and reporting of psychological research.***
APA SLO (2013): ***3.1c—Discuss relevant ethical issues that reflect principles in the APA Code of 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) IRBs 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.
Answer: A
Rationale: 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
Skill: Conceptual
Objective: ***Know the key terminology of research ethics.***
APA SLO (2008): ***2.5—Follow the APA Code of Ethics in the treatment of human and nonhuman participants in the design, data collection, interpretation, and reporting of psychological research.***
APA SLO (2013): ***3.1c—Discuss relevant ethical issues that reflect principles in the APA Code of 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.
Answer: A
Rationale: 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.
Diff: 2
Skill: Conceptual
Objective: ***Know the key terminology of research ethics.***
APA SLO (2008): ***2.5—Follow the APA Code of Ethics in the treatment of human and nonhuman participants in the design, data collection, interpretation, and reporting of psychological research.***
APA SLO (2013): ***3.1c—Discuss relevant ethical issues that reflect principles in the APA Code of Ethics.***

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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.
Answer: A
Rationale: Deception can have serious consequences for participants. However, researchers can use deception under most circumstances when it is necessary.
Diff: 2
Skill: Factual
Objective: ***Analyze the role of using deception in psychological research.***
APA SLO (2008): ***2.5—Follow the APA Code of Ethics in the treatment of human and nonhuman participants in the design, data collection, interpretation, and reporting of psychological research.***
APA SLO (2013): ***3.1c—Discuss relevant ethical issues that reflect principles in the APA Code of Ethics.***

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
Answer: A
Rationale: 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.
Diff: 1
Skill: Applied
Objective: ***Know the key terminology of research ethics.***
APA SLO (2008): ***2.5—Follow the APA Code of Ethics in the treatment of human and nonhuman participants in the design, data collection, interpretation, and reporting of psychological research.***
APA SLO (2013): ***3.1c—Discuss relevant ethical issues that reflect principles in the APA Code of Ethics.***

104. Participants in modern psychology experiments are given the right to:
A) choose which treatment group they are in.
B) withhold 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.
Answer: B
Rationale: 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.
Diff: 2
Skill: Factual
Objective: ***Apply the ethical principles of scientific research to examples.***
APA SLO (2008): ***2.5—Follow the APA Code of Ethics in the treatment of human and nonhuman participants in the design, data collection, interpretation, and reporting of psychological research.***
APA SLO (2013): ***3.1c—Discuss relevant ethical issues that reflect principles in the APA Code of Ethics.***

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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.
Answer: D
Rationale: 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 are kept secure (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 had been published.
Diff: 3
Skill: Conceptual
Objective: ***Apply the ethical principles of scientific research to examples.***
APA SLO (2008): ***2.5—Follow the APA Code of Ethics in the treatment of human and nonhuman participants in the design, data collection, interpretation, and reporting of psychological research.***
APA SLO (2013): ***3.1c—Discuss relevant ethical issues that reflect principles in the APA Code of Ethics.***

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
Answer: B
Rationale: 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 the results will generalize to people.
Diff: 1
Skill: Applied
Objective: ***Understand the ethical guidelines that apply to research with humans or other species.***
APA SLO (2008): ***2.5—Follow the APA Code of Ethics in the treatment of human and nonhuman participants in the design, data collection, interpretation, and reporting of psychological research.***
APA SLO (2013): ***3.1c—Discuss relevant ethical issues that reflect principles in the APA Code of Ethics.***

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 behavior.
D) Animal research is useful because risk and discomfort to non-human subjects do not need to be addressed.
Answer: A
Rationale: 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.
Diff: 2
Skill: Conceptual
Objective: ***Understand the ethical guidelines that apply to research with humans or other species.***
APA SLO (2008): ***2.5—Follow the APA Code of Ethics in the treatment of human and nonhuman participants in the design, data collection, interpretation, and reporting of psychological research.***
APA SLO (2013): ***3.1c—Discuss relevant ethical issues that reflect principles in the APA Code of Ethics.***

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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.
Answer: B
Rationale: 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 require any risk or discomfort to be justified, just as it is for human subjects.
Diff: 2
Skill: Conceptual
Objective: *Understand the ethical guidelines that apply to research with humans or other species.*
APA SLO (2008): *2.5—Follow the APA Code of Ethics in the treatment of human and nonhuman participants in the design, data collection, interpretation, and reporting of psychological research.*
APA SLO (2013): *3.1c—Discuss relevant ethical issues that reflect principles in the APA Code of Ethics.*

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.
Answer: D
Rationale: 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.
Diff: 2
Skill: Factual
Objective: *Understand the importance of reporting and storing data.*
APA SLO (2008): *2.5—Follow the APA Code of Ethics in the treatment of human and nonhuman participants in the design, data collection, interpretation, and reporting of psychological research.*
APA SLO (2013): *3.1c—Discuss relevant ethical issues that reflect principles in the APA Code of Ethics.*

Module 2.4: A Statistical Primer

Know…

- the key terminology of statistics

Understand…

- how and why psychologists use significance tests

Apply…

- your knowledge to interpret the most frequently used types of graphs

Analyze...

- the choice of central tendency statistics based on the shape of the distribution
- the conclusions that psychologists can make based on significance tests

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110. _____ are a set of techniques used to organize, summarize, and interpret data.
A) Central tendencies
B) Inferential statistics
C) Distributions
D) Descriptive statistics
Answer: D
Rationale: 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.
Diff: 1
Skill: Factual
Objective: ***Know the key terminology of statistics.***
APA SLO (2008): ***7.3—Exhibit quantitative literacy. Demonstrate effective interpersonal communication.***
APA SLO (2013): ***1.1a--Use basic psychological terminology, concepts, and theories in psychology to explain behavior and mental processes. 2.4c--Define and explain the purpose of key research concepts that characterize psychological research (e.g. hypothesis, operational definition).***

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.
Answer: C
Rationale: Descriptive statistics are mathematical tools used primarily to organize and summarize data.
Diff: 2
Skill: Conceptual
Objective: ***Know the key terminology of statistics.***
APA SLO (2008): ***7.3—Exhibit quantitative literacy. Demonstrate effective interpersonal communication.***
APA SLO (2013): ***2.4c--Define and explain the purpose of key research concepts that characterize psychological research (e.g. hypothesis, operational definition).***

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
Answer: A
Rationale: 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 3.
Diff: 2
Skill: Factual
Objective: ***Know the key terminology of statistics.***
APA SLO (2008): ***7.3—Exhibit quantitative literacy. Demonstrate effective interpersonal communication.***
APA SLO (2013): ***2.4c--Define and explain the purpose of key research concepts that characterize psychological research (e.g. hypothesis, operational definition).***

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113. What does the height of the bars on a histogram indicate?
A) mean
B) range
C) frequency
D) score or value
Answer: C
Rationale: 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.
Diff: 2
Skill: Factual
Objective: ***Apply your knowledge to interpret the most frequently used types of graphs.***
APA SLO (2008): ***7.3—Exhibit quantitative literacy. Demonstrate effective interpersonal communication.***
APA SLO (2013): ***2.4c--Define and explain the purpose of key research concepts that characterize psychological research (e.g. hypothesis, operational definition).***

114. The scores on most standardized tests have a _____ distribution.
A) normal
B) positively skewed
C) negatively skewed
D) bimodal
Answer: A
Rationale: Many variables wind up in a normal distribution, such as the scores on most standardized tests or the average high temperature in Sioux Falls, SD, throughout the month of January.
Diff: 2
Skill: Factual
Objective: ***Know the key terminology of statistics.***
APA SLO (2008): ***7.3—Exhibit quantitative literacy. Demonstrate effective interpersonal communication.***
APA SLO (2013): ***2.4c--Define and explain the purpose of key research concepts that characterize psychological research (e.g. hypothesis, operational definition).***

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 was to graph the distribution, what shape would it have?
A) normal
B) positively skewed
C) negatively skewed
D) central
Answer: B
Rationale: 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.
Diff: 3
Skill: Applied
Objective: ***Apply your knowledge to interpret the most frequently used types of graphs.***
APA SLO (2008): ***7.3—Exhibit quantitative literacy. Demonstrate effective interpersonal communication.***
APA SLO (2013): ***2.4c--Define and explain the purpose of key research concepts that characterize psychological research (e.g. hypothesis, operational definition).***

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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
Answer: A
Rationale: A negatively skewed distribution occurs when the curve has an extended tail to the left of the cluster.
Diff: 2
Skill: Factual
Objective: ***Know the key terminology of statistics.***
APA SLO (2008): ***7.3—Exhibit quantitative literacy. Demonstrate effective interpersonal communication.***
APA SLO (2013): ***2.4c--Define and explain the purpose of key research concepts that characterize psychological research (e.g. hypothesis, operational definition).***

117. Which of the following is a measure of central tendency?
A) mode
B) variability
C) range
D) standard deviation
Answer: A
Rationale: Mode, median, and mean are the three most commonly used measures of central tendency. Range and standard deviation are measures of variability.
Diff: 1
Skill: Factual
Objective: ***Know the key terminology of statistics.***
APA SLO (2008): ***7.3—Exhibit quantitative literacy. Demonstrate effective interpersonal communication.***
APA SLO (2013): ***2.4c--Define and explain the purpose of key research concepts that characterize psychological research (e.g. hypothesis, operational definition).***

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
Answer: C
Rationale: 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.
Diff: 3
Skill: Applied
Objective: ***Know the key terminology of statistics.***
APA SLO (2008): ***7.3—Exhibit quantitative literacy. Demonstrate effective interpersonal communication.***
APA SLO (2013): ***2.4c--Define and explain the purpose of key research concepts that characterize psychological research (e.g. hypothesis, operational definition).***

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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
Answer: D
Rationale: For normal distributions, the mean, median, and mode are always equal to each other.
Diff: 2
Skill: Factual
Objective: Analyze the choice of central tendency statistics based on the shape of the distribution.
APA SLO (2008): *7.3—Exhibit quantitative literacy. Demonstrate effective interpersonal communication.*
APA SLO (2013): *2.4c----Define and explain the purpose of key research concepts that characterize psychological research (e.g. hypothesis, operational definition).*

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
Answer: B
Rationale: When a distribution is skewed, the mean is pulled away from the center. 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.
Diff: 3
Skill: Factual
Objective: *Analyze the choice of central tendency statistics based on the shape of the distribution.*
APA SLO (2008): *7.3—Exhibit quantitative literacy. Demonstrate effective interpersonal communication.*
APA SLO (2013): 2.4c----Define and explain the purpose of key research concepts that characterize psychological research (e.g. hypothesis, operational definition).

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
Answer: A
Rationale: Variability is the degree to which scores are dispersed in a distribution. The scores in a distribution with low variability cluster close together.
Diff: 3
Skill: Factual
Objective: *Know the key terminology of statistics.*
APA SLO (2008): *7.3—Exhibit quantitative literacy. Demonstrate effective interpersonal communication.*
APA SLO (2013): *2.4c--Define and explain the purpose of key research concepts that characterize psychological research (e.g. hypothesis, operational definition).*

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122. Conceptually, the standard deviation for a distribution can be thought of as:
A) the center 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 value.
Answer: C
Rationale: 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.
Diff: 2
Skill: Conceptual
Objective: *Know the key terminology of statistics.*
APA SLO (2008): *7.3—Exhibit quantitative literacy. Demonstrate effective interpersonal communication.*
APA SLO (2013): *2.4c--Define and explain the purpose of key research concepts that characterize psychological research (e.g. hypothesis, operational definition).*

123. Standard deviation is a measure of _____.
A) central tendency
B) variability
C) statistical significance
D) correlation
Answer: B
Rationale: 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.
Diff: 1
Skill: Factual
Objective: *Know the key terminology of statistics.*
APA SLO (2008): *7.3—Exhibit quantitative literacy. Demonstrate effective interpersonal communication.*
APA SLO (2013): *2.4c--Define and explain the purpose of key research concepts that characterize psychological research (e.g. hypothesis, operational definition).*

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
Answer: A
Rationale: 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.
Diff: 3
Skill: Applied
Objective: *Know the key terminology of statistics.*
APA SLO (2008): *7.3—Exhibit quantitative literacy. Demonstrate effective interpersonal communication.*
APA SLO (2013): *2.4c--Define and explain the purpose of key research concepts that characterize psychological research (e.g. hypothesis, operational definition).*

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125. The term *statistical significance* implies that the results are _____.
A) important
B) extremely meaningful
C) valid
D) not likely due to chance
Answer: D
Rationale: 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 was repeated again.
Diff: 3
Skill: Conceptual
Objective: ***Understand how and why psychologists use significance tests.***
APA SLO (2008): ***2.3.b—Distinguish between statistical and practical significance.***
APA SLO (2013): ***2.4c--Define and explain the purpose of key research concepts that characterize psychological research (e.g. hypothesis, operational definition).***
% correct 100 a= 0 b= 0 c= 0 d= 100 *r* = .00

126. Dr. Kwan's 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.
Answer: C
Rationale: 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.
Diff: 3
Skill: Applied
Objective: ***Analyze the conclusions that psychologists can make based on significance tests.***
APA SLO (2008): ***1.2—Demonstrate knowledge and understanding representing appropriate breadth and depth in selected content areas of psychology: theory and research representing general domains, the history of psychology, relevant levels of analysis, the overarching themes, and relevant ethical issues.***
APA SLO (2013): ***1.1a--Use basic psychological terminology, concepts, and theories in psychology to explain behavior and mental processes.***

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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
Answer: C
Rationale: 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.
Diff: 2
Skill: Conceptual
Objective: ***Understand how and why psychologists use significance tests.***
APA SLO (2008): ***1.2—Demonstrate knowledge and understanding representing appropriate breadth and depth in selected content areas of psychology: theory and research representing general domains, the history of psychology, relevant levels of analysis, the overarching themes, and relevant ethical issues.***
APA SLO (2013): ***2.4c--Define and explain the purpose of key research concepts that characterize psychological research (e.g. hypothesis, operational definition).***

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Fill in the Blank Items

1. Before beginning an experiment, researchers use_____ to define exactly how variables like "intelligence" or "happiness" will be measured.
Answer: operational definitions
Rationale: 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
Skill: Factual
Objective: ***Know the key terminology related to the principles of scientific research.***
APA SLO (2008): ***1.2—Demonstrate knowledge and understanding representing appropriate breadth and depth in selected content areas of psychology: theory and research representing general domains, the history of psychology, relevant levels of analysis, the overarching themes, and relevant ethical issues.***
APA SLO (2013): ***1.1a--Use basic psychological terminology, concepts, and theories in psychology to explain behavior and mental processes.***

2. _____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.
Answer: Demand characteristics
Rationale: 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
Skill: Conceptual
Objective: ***Understand how biases might influence the outcome of a study.***
APA SLO (2008): ***2.4.e—Recognize that theoretical and sociocultural contexts as well as personal biases may shape research questions, design, data collection, analysis, and interpretation.***
APA SLO (2013): ***2.4c--Define and explain the purpose of key research concepts that characterize psychological research (e.g. hypothesis, operational definition).***

3. Before research findings can be published they go through _____, 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.
Answer: peer review
Rationale: In the peer review process, the editors and reviewers serve as gatekeepers for the discipline, ensuring that the best research is made public.
Diff: 1 Page Ref: 38-39
Skill: Factual
Objective: ***Know the key terminology related to the principles of scientific research***
APA SLO (2008): ***2.1—Describe the basic characteristics of the science of psychology***
APA SLO (2013): ***2.1a--Identify basic biological, psychological, and social components of psychological explanations (e.g. inferences, observations, operational definitions, interpretations)***

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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 _____ and cannot be considered reliable.
Answer: anecdotal evidence
Rationale: 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 base scientific conclusions on, even if the basic facts of the story are correct.
Diff: 2
Skill: Applied
Objective: ***Analyze whether anecdotes, authority figures, and common sense are reliably truthful sources of information***
APA SLO (2008): ***2.1—Describe the basic characteristics of the science of psychology.***
APA SLO (2013): ***2.1a--Identify basic biological, psychological, and social components of psychological explanations (e.g. inferences, observations, operational definitions, interpretations)***

5. Case studies, naturalistic observation, and surveys and questioners are all types of _____ research, because they can only be used to collect observations.
Answer: descriptive
Rationale: 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 -44
Skill: Conceptual
Objective: Know the key terminology related to research designs.
APA SLO (2008): 2.2—Explain different research methods used by psychologists.
APA SLO (2013): ***2.1a--Identify basic biological, psychological, and social components of psychological explanations (e.g. inferences, observations, operational definitions, interpretations)***

6. _____ designs are the only research method that can provide strong evidence for cause-and-effect relationships.
Answer: Experimental
Rationale: 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 -46
Skill: Factual
Objective: ***Understand how experiments help demonstrate cause-and-effect relationships.***
APA SLO (2008): ***2.2—Explain different research methods used by psychologists.***
APA SLO (2013): ***2.1a--Identify basic biological, psychological, and social components of psychological explanations (e.g. inferences, observations, operational definitions, interpretations)***

7. To study the effect of subliminal advertising on consumer behavior, participants were randomly assigned to either watch a movie with or without subliminal advertising. The group of participants that saw the movie without the ads is called _____.
Answer: the control group
Rationale: 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
Skill: Applied
Objective: Know the key terminology related to research designs.
APA SLO (2008): ***2.2—Explain different research methods used by psychologists.***
APA SLO (2013): ***2.1a--Identify basic biological, psychological, and social components of psychological explanations (e.g. inferences, observations, operational definitions, interpretations)***

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8. Research participants in psychology studies must give _____, meaning that they are told about the experiment—including any potential risks—and then freely agree to participate.
Answer: informed consent
Rationale: 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
Skill: Conceptual
Objective: Know the key terminology of research ethics.
APA SLO (2008): *2.5—Follow the APA Code of Ethics in the treatment of human and nonhuman participants in the design, data collection, interpretation, and reporting of psychological research.*
APA SLO (2013): *3.1c Discuss relevant ethical issues that reflect principles in the APA Ethics Code*

9. The _____ is a commonly occurring distribution that is characterized by its symmetrical shape with values clustered around a mean value.
Answer: normal distribution (or bell curve)
Rationale: 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 Sioux Falls, SD, throughout the month of January.
Diff: 2 Page Ref: 56
Skill: Conceptual
Objective: Know the key terminology of statistics.
APA SLO (2008): *1.2—Demonstrate knowledge and understanding representing appropriate breadth and depth in selected content areas of psychology: theory and research representing general domains, the history of psychology, relevant levels of analysis, the overarching themes, and relevant ethical issues.*
APA SLO (2013): *1.1a--Use basic psychological terminology, concepts, and theories in psychology to explain behavior and mental processes.*

10. If the difference between groups in an experiment is unlikely to have occurred by random chance alone, the difference is said to be _____.
Answer: statistically significant
Rationale: 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
Skill: Conceptual
Objective: *Know the key terminology related to the principles of scientific research.*
APA SLO (2008): 2.3.b—Distinguish between statistical and practical significance.
APA SLO (2013): *2.1a--Identify basic biological, psychological, and social components of psychological explanations (e.g. inferences, observations, operational definitions, interpretations)*

True-False Items

1. Good scientific research is based on measurements that are objective, valid, and reliable.
Answer: True
Module: 2.1
Rationale: 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 re-measured).

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2. If someone takes an intelligence test several times and receives the same score, the test has high validity.
Answer: False
Module: 2.1
Rationale: 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.

3. Using random sampling increases the likelihood that the results from studying a sample will generalize to the population.
Answer: True
Module: 2.1
Rationale: In order for a sample to generalize to a population psychologists prefer to use random sampling whenever possible.

4. In a double-blind experiment, neither the participant nor the researcher knows which treatment group the participant is in.
Answer: True
Module: 2.1
Rationale: Statement of fact.

5. Once the results of a study have been peer reviewed and published they are considered accurate, even if other researchers cannot replicate them.
Answer: False
Module: 2.1
Rationale: 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.

6. Surveys and questionnaires are used to collect self-report data.
Answer: True
Module: 2.2
Rationale: Surveys and questionnaires come in many different forms, but all of them rely on participants to speak for themselves and make their own observations.

7. A correlation of –.80 is a stronger relationship than a correlation of +.50.
Answer: True
Module: 2.2
Rationale: 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.

8. If a group of researchers find that the number of books 5th graders 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.
Answer: False
Module: 2.2
Rationale: Correlation is not a measure of causality. Being intelligent might cause children to read more, or a third variable like parenting style, might be affecting both intelligence and reading.

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.
Answer: True
Module: 2.2
Rationale: 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.

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10. The volunteers for the Tuskegee Syphilis Study were intentionally left untreated for decades and many died from the disease.
Answer: True
Module: 2.3
Rationale: The Tuskegee Syphilis Study is an often-cited example of unethical research on human beings. The 399 African American subjects were lied to about the nature of their disease, and then left untreated, despite the fact that an effective cure was available for the majority of the study.

11. Asking participants to write about upsetting or traumatic experiences puts them at risk for cognitive and emotional stress.
Answer: True
Module: 2.3
Rationale: 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.

12. Researchers are not allowed to deceive participants about the purpose of the study.
Answer: False
Module: 2.3
Rationale: 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.

13. The right to give informed consent stays with a volunteer throughout the entire study, and they should be able to withdraw at any point.
Answer: True
Module: 2.3
Rationale: This is one of the key elements of modern psychology research.

14. Researchers must give participants total anonymity.
Answer: False
Module: 2.3
Rationale: 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.

15. 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.
Answer: False
Module: 2.3
Rationale: 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.

16. A negatively skewed distribution has a long tail on the right of the cluster.
Answer: False
Module: 2.4
Rationale: 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.

17. The mean, median, and mode are all measures of central tendency.
Answer: True
Module: 2.4
Rationale: Statement of fact.

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18. When a distribution is skewed, the median is a better measure of the "average" than the mean.
Answer: True
Module: 2.4
Rationale: Because the mean is disproportionally affected by the few extreme scores in the tail, the median is considered a better measure of central tendency for skewed distributions.

19. If the distribution of quiz scores for a class has high variability, most of the students scored within a few points of each other.
Answer: False
Module: 2.4
Rationale: Variability is the degree to which scores are dispersed in a distribution. If the variability is high, the scores would more spread out and less clustered.

20. If researchers find a statistically significant result, they would be likely to find the same result if they replicated the study again.
Answer: True
Module: 2.4
Rationale: 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.

Essay Questions

1. What are the five characteristics of good research described in the textbook? Briefly explain each.
Module: 2.1
Answer: A good answer will include the following key points.
- **Research should be based on measurements which 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.**

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.
Module: 2.1
Answer: A good answer will include the following key points.
- **Anecdotal evidence is based on the stories of individuals about a specific observation or event.**
- **Anecdotal evidence is unreliable because there is no way of knowing exactly what really happened, why it happened, or how likely it is to happen again.**
- **Appeals to authority can be misleading because expertise is not actually evidence. Experts can be wrong or misquoted.**
- **Appeals to common sense are a poor form of evidence because common sense can often be misleading.**
- **Specific examples will vary.**

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3. Describe and compare correlational research and experimental research. What key advantage does experimental research have over correlational research?
Module: 2.2
Answer: A good answer will include the following key points.
- **Correlational research involves measuring the degree of association between two or more variables.**
- **It involves calculating correlation coefficients, which indicate the strength and direction of an association.**
- **Correlational research cannot be used to determine causation. The experimental method is the only technique that can provide strong evidence for cause-and-effect relationships.**
- **In an experiment, subjects are randomly assigned to two or more groups, which differ only by an independent variable which the experimenters manipulate.**
- **Experimenters then measure one or more dependent variables and compare them across the groups.**
- **This allows researchers to determine if manipulating the independent variable has an effect on the dependent variable.**

4. Although sometimes controversial, animal research plays an important role in psychology research. Explain four reasons psychologists use animal subjects.
Module: 2.3
Answer: A good answer will include the following key points.
- **Psychology is not just the study of human behavior. Many psychologists study animal behavior for its own sake.**
- **Some procedures could never ethically be done with human subjects.**
- **Many animals have relatively short life spans, which makes it easier for researchers to observe several generations.**
- **Lab animals can be bred to reduce genetic differences between subjects.**

5. An experiment is conducted to test the hypothesis that taking gingko supplements increases memory. Participants are randomly assigned to receive gingko or placebo pills for a month and then their memory is tested. If the gingko group's average test score is 3 points higher than the placebo group, can the researchers conclude that the results support the hypothesis? If not, what do the researchers need to do to determine if the results support the results or not?
Module: 2.4
Answer: A good answer will include the following key points.
- **The researchers cannot determine whether the results support the hypothesis until they determine if the difference between the two groups is statistically significant or not.**
- **Statistical significance implies that the difference between the two groups is unlikely to have occurred by random chance alone.**
- **To test whether the result is statically significant, the researchers will need to use a set of procedures called a hypothesis test.**

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REVEL QUESTIONS

1. The degree to which an instrument measures what it is intended to measure is known as _____.
a. validity
b. generalizability
c. verifiability
d. reliability
Answer: A
Module 2.1
Rationale: Rather than shoe size, valid measures of intelligence might include problem solving and logical thinking—abilities that actually constitute the definition of intelligence.
Diff: 1
Skill: Factual
Objective: ***Know the key terminology related the principles of scientific research.***
APA SLO (2013): ***2.4c--Define and explain the purpose of key research concepts that characterize psychological research (e.g. hypothesis, operational definition).***

2. When psychologists question how well the results of a study apply to other samples or perhaps other situations, they are inquiring about the _____ of the study.
a. validity
b. generalizability
c. verifiability
d. reliability
Answer: B
Module 2.1
Rationale: One way to increase the possibility that research results will generalize is to study a large group of subjects.
Diff: 1
Skill: Conceptual
Objective: ***Understand the five characteristics of quality research.***
APA SLO (2013): ***2.1a--Identify basic biological, psychological, and social components of psychological explanations (e.g. inferences, observations, operational definitions, interpretations)***

3. In a single-blind study, the participants do not know the purpose of the study or the condition to which they are assigned. What is the difference in a double-blind study?
a. The researcher tells the participants the purpose and their assigned conditions in the study.
b. The participants also do not know when the actual study begins or ends.
c. The researcher also does not know which condition the participants are in.
d. The participants know to which condition they have been assigned, but the researcher does not.
Answer: C
Module 2.1
Rationale: Neither the participant nor the experimenter knows the exact treatment for any individual.
Diff: 2
Skill: Conceptual
Objective: ***Understand how biases might influence the outcome of a study.***
APA SLO (2013): ***2.5a—Related examples of how a researcher's value system, sociocultural characteristics, and historical context influence the development of scientific inquiry on psychological questions.***

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4. Dr. Rose gives a standardized personality test to a group of psychology majors in January and again in March. Each individual's score remained nearly the same over the two-month period. From this, Dr. Rose can infer that the test is _____.
a. reliable
b. generalizable
c. objective
d. verified
Answer: A
Module 2.1
Rationale: As long as an experiment uses sufficiently objective measurements and techniques, and if the original hypothesis was correct, then similar results should be achieved by later researchers who perform the same types of studies.
Diff: 2
Skill: Applied
Objective: ***Apply the concepts of reliability and validity to examples.***
APA SLO (2013): ***1.1a--Use basic psychological terminology, concepts, and theories in psychology to explain behavior and mental processes.***

5. You overheard someone claiming that 12-step programs are the only way to really quit abusing alcohol "Because my brother is a doctor and so he should know." Regardless of the accuracy of the claim, this and other appeals to authority do not qualify as good evidence because:
a. they always lack common sense.
b. authority figures are likely to distort the truth.
c. authority does not mean that the claim is based on sound, scientific evidence.
d. authority is typically based on anecdotal evidence.
Answer: C
Module 2.1
Rationale: Expertise is not actually evidence; the term "expert" describes the person making the claim, not the claim itself.
Diff: 3
Skill: Applied
Objective: ***Analyze whether anecdotes, authority figures, and common sense are reliably truthful sources of information.***
APA SLO (2013): ***2.1a--Identify basic biological, psychological, and social components of psychological explanations (e.g. inferences, observations, operational definitions, interpretations)*.**

6. When psychologists observe behavior and record data in the environment where it normally occurs, they are using _____.
a. case studies
b. naturalistic observation
c. the supervisory method
d. artificial observation
Answer: B
Module 2.2
Rationale: This can occur anywhere that behavior occurs, and it can apply to any behavior imaginable
Diff: 1
Skill: Factual
Objective: ***Know the key terminology related to research design.***
APA SLO (2013): ***2.4a—Describe research methods used by psychologists including their respective advantages and disadvantages.***

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7. The process of setting up two or more groups in an experiment is called _____.
a. correlation
b. observation
c. random assignment
d. selection
Answer: C
Module 2.2
Rationale: If we allowed the participants to choose their own group, we could not be sure that the two groups were similar to start with.
Diff: 1
Skill: Factual
Objective: ***Know the key terminology related to research designs.***
APA SLO (2013): ***2.4a—Describe research methods used by psychologists including their respective advantages and disadvantages.***

8. What does it mean to say that two variables are negatively correlated?
a. An increase in one variable is associated with a decrease in the other.
b. An increase in one variable is associated with an increase in the other.
c. A decrease in one variable is associated with a decrease in the other.
d. The two variables have no relationship.
Answer: A
Module 2.2
Rationale: The more of one variable, the less of the other (such as more sleep being associated with lower irritability).
Diff: 2
Skill: Conceptual
Objective: ***Understand what it means when variables are positively or negatively correlated.***
APA SLO (2013): ***1.1a--Use basic psychological terminology, concepts, and theories in psychology to explain behavior and mental processes. 2.4a--Describe research methods used by psychologists including their respective advantages and disadvantages.***

9. A researcher sets up an experiment to test a new antidepressant medication. One group receives the treatment, and the other receives a placebo. The researcher then measures depression using a standardized self-report measure. What is the independent variable in this case?
a. Whether the individuals scored high or low on the depression measure
b. Whether the individuals received the treatment or a placebo
c. Whether the individuals were experiencing depression before the study began
d. Whether the individuals, depression decreased or increased during the study period
Answer: B
Module 2.2
Rationale: This is the variable that the experimenter manipulates to distinguish between the two groups.
Diff: 2
Skill: Applied
Objective: ***Apply the term and concepts of experimental methods to understand research examples.***
APA SLO (2013): ***2.4a--Describe research methods used by psychologists including their respective advantages and disadvantages.***

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10. A researcher is able to conduct an experiment on study habits in his laboratory and he finds some exciting results. What is one possible shortcoming of using this method?
a. Results from laboratory experiments do not always generalize to real-world situations.
b. Experiments do not provide evidence about cause-and-effect relationships.
c. It is not possible to conduct experiments on issues such as study habits.
d. Laboratory experiments do not control for confounding variables.
Answer: A
Module 2.2
Rationale: With an experiment, there is a risk of being artificial with limited generalization to real-world situations.
Diff: 3
Skill: Applied
Objective: ***Analyze the pros and cons of descriptive, correlational, and experimental research designs.***
APA SLO (2013): ***2.4e--Explain why conclusions in psychological projects must be both reliable and valid.***

11. The Institutional Review Board (IRB) is a committee that determines:
a. whether a hypothesis is valid.
b. whether the benefits of a proposed study outweigh its potential risks.
c. whether a study should be published in a scientific journal.
d. whether animal research is overall an ethical practice.
Answer: B
Module 2.3
Rationale: It requires that volunteers agree to participate in the research.
Diff: 1
Skill: Factual
Objective: ***Know the key terminology of research ethics.***
APA SLO (2013): ***3.1d--Define the role of the institutional review board (IRB).***

12. Which of the following is not a requirement for informed consent?
a. Participants need to know the nature of the stimuli to which they will be exposed.
b. Participants need to understand any potential physical, psychological, or social risks involved in the research.
c. Participants need to have a face-to-face meeting with the researcher before volunteering.
d. Participants need to know the approximate duration of the study.
Answer: C
Module 2.3
Rationale: 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
Skill: Conceptual
Objective: ***Understand the ethical guidelines that apply to research with human or other species.***
APA SLO (2013): ***3.1c—Discuss relevant ethical issues that reflect principles in the APA Code of Ethics.***

13. Researchers should store their data after they present or publish it because:
a. Other researchers may want to examine the data before conducting a replication study.
b. Other researchers may want to reinterpret the data using different techniques.
c. The process of informed consent requires it.
d. Both a and b are true.
Answer: D
Module 2.3
Rationale: As long as an experiment uses sufficiently objective measurements and techniques, and if the original hypothesis was correct, then similar results should be achieved by later researchers who perform the same types of studies.
Diff: 2
Skill: Conceptual
Objective: ***Understand the importance of reporting and storing data.***
APA SLO (2013): ***3.1c—Discuss relevant ethical issues that reflect principles in the APA Code of Ethics.***

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14. After completing a naturalistic observation study, a researcher does not quite have enough evidence to support her hypothesis. If she decides to go back to her records and slightly alter a few of the observations to fit her hypothesis, she is engaged in _____.
a. scientific forgery
b. scientific misconduct
c. correcting the data
d. ethical behavior
Answer: B
Module 2.3
Rationale: This happens when individuals fabricate or manipulate their data to fit their desired results.
Diff: 2
Skill: Applied
Objective: ***Apply the ethical principles of scientific research to examples.***
APA SLO (2013): ***3.1b--Identify obvious violations of ethical standards in psychological contexts***

15. In a memory study, researchers have participants study a list of words, and then tell them it was the wrong list and that they should forget it. This deception is meant to see how effectively participants can forget something they have already studied. If the researchers plan to debrief the participants afterward, would this design meet the standards of an ethical study?
a. No, it is not okay to mislead individuals during the course of a study.
b. Yes, given that the participants are not at risk and that they will be debriefed, this seems to be an ethical study.
c. No, because the researchers should not debrief the participants—it will simply cause them to become angry.
d. Yes, because participants fully understood all aspects of the study.
Answer: B
Module 2.3
Rationale: Ethical guidelines often help to negotiate conflicting interests, and in psychological research the main conflict is between the need for informed consent and the need for "blinded" volunteers.
Diff: 3
Skill: Applied
Objective: ***Analyze the role of using deception in psychological research.***
APA SLO (2013): ***3.1c—Discuss relevant ethical issues that reflect principles in the APA Code of Ethics.***

16. The _____ always marks the 50th percentile of the distribution.
a. mean
b. median
c. mode
d. standard deviation
Answer: B
Module 2.4
Rationale: `This is` the point on the horizontal axis at which 50% of all observations are lower, and 50% of all observations are higher.
Diff: 1
Skill: Factual
Objective: ***Know the key terminology of statistics.***
APA SLO (2013): ***2.4c--Define and explain the purpose of key research concepts that characterize psychological research (e.g. hypothesis, operational definition).***

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17. A hypothesis test is conducted after an experiment to:
a. determine whether the two groups in the study are exactly the same.
b. determine how well the two groups are correlated.
c. see if the groups are significantly different, as opposed to being different due to chance.
d. summarize the distribution using a single score.
Answer: C
Module 2.4
Rationale: The groups would be different because of the independent variable.
Diff: 1
Skill: Conceptual
Objective: ***Understand how and why psychologists use significance tests.***
APA SLO (2013): ***2.4c--Define and explain the purpose of key research concepts that characterize psychological research (e.g. hypothesis, operational definition).***

18. A histogram is created that presents data on the number of mistakes participants in a research study made on a memory test. The vertical axis indicates:
a. the frequency of errors made.
b. the total number of participants.
c. the gender of the participants.
d. the mean number of errors made.
Answer: A
Module 2.4
Rationale: The vertical axis shows the frequency**, the number of observations that fall within a certain category or range of scores.**
Diff: 2
Skill: Applied
Objective: ***Apply your knowledge to interpret the most frequently used types of graphs.***
APA SLO (2013): ***2.4c--Define and explain the purpose of key research concepts that characterize psychological research (e.g. hypothesis, operational definition).***

19. In a survey of recent graduates, your college reports that the mean salaries of the former students are positively skewed. What are the consequences of choosing the mean rather than the median or the mode in this case?
a. The mean is likely to provide a number that is lower than the largest cluster of scores.
b. The mean is likely to provide a reliable estimate of where the scores cluster.
c. The mean is likely to provide a number that is higher than the largest cluster of scores.
d. The mean provides the 50th percentile of the distribution, making it the best choice to depict this cluster of scores.
Answer: C
Module 2.4
Rationale: The mean is the arithmetic average of a set of numbers.
Diff: 3
Skill: Applied
Objective: ***Analyze the choice of central tendency statistics based on the shape of the distribution.***
APA SLO (2013): ***2.4c----Define and explain the purpose of key research concepts that characterize psychological research (e.g. hypothesis, operational definition).***

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20. Imagine an experiment where the mean of the experimental group is 50 and the mean of the control group is 40. Given that the two means are obviously different, is it still possible for a researcher to say that the two groups are not significantly different?
a. Yes, the two groups could overlap so much that the difference was not significant.
b. Yes, if the difference was not predicted by the hypothesis.
c. No, because the two groups are clearly far too different for the difference to not be significant.
d. There is not enough information to answer this question.
Answer: A
Module 2.4
Rationale: The difference is likely to have statistical significance**, which implies that the means of the groups are farther apart than you would expect them to be by random chance alone.**
Diff: 3
Skill: Applied
Objective: ***Analyze the conclusions that psychologists can reach based on significance tests.***
APA SLO (2013): ***1.1a--Use basic psychological terminology, concepts, and theories in psychology to explain behavior and mental processes.***

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GENERAL TEST BANK

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 % correct 79 a= 3 b= 3 c= 79 d= 16 r = .30
Module 2.1

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 % correct 95 a= 95 b= 2 c= 3 d= 1 r = .25
Module 2.1

3. A psychologist, studying pilot trainees, picks a select group of trainees who is hopefully 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 % correct 81 a= 81 b= 8 c= 7 d= 4 r = .46
Module 2.1

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 % correct 97 a= 1 b= 97 c= 1 d= 1 r = .29
Module 2.1

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 % correct 89 a= 1 b= 9 c= 1 d= 89 r = .28
Module 2.1

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6. 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 % correct 79 a= 2 b= 79 c= 16 d= 4 r = .46
Module 2.1

7. One of the main reasons for using a laboratory for psychological research is to:
a. prevent subjects from escaping.
b. study behavior in a natural setting.
c. do large-scale studies.
d. allow the researchers to control certain factors.

Answer d % correct 98 a= 0 b= 0 c= 2 d= 98 r = .33
Module 2.1

8. 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 a % correct 83 b= 3 b= 90 c= 5 d= 1 r = .25
Module 2.1

9. 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 % correct 70 a= 4 b= 5 c= 70 d= 21 r = .33
Module 2.1

10. 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 % correct 97 a= 2 b= 1 c= 97 d= 1 r = .20
Module 2.1

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11. 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 % correct 89 a= 2 b= 89 c= 6 d= 4 r = .21
Module 2.1

12. Observing behavior 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 % correct 97 a= 97 b= 2 c= 1 d= 1 r = .20
Module 2.2

13. A detailed, well-researched biography of a famous historical person is technically an example of the _____ method of research.
a. psychometric
b. naturalistic observation
c. case study
d. correlational

Answer c % correct 83 a= 5 b= 9 c= 83 d= 2 r = .18
Module 2.2

14. When you watch dogs play in the park or watch how your professors conduct their classes, you are engaging in a form of _____.
a. case study research
b. survey research
c. naturalistic observation
d. psychometric study

Answer c % correct 99 a= 1 b= 0 c= 99 d= 0 r = .0
Module 2.2

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 % correct 83 a= 4 b= 13 c= 83 d= 0 r = .20
Module 2.2

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16. A research method in which the real-life behavior of a pre-selected person or a group is studied at an in-depth level 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 % correct 95 a= 3 b= 1 c= 95 d= 2 r = .20
Module 2.2

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

Answer b % correct 97 a= 3 b= 97 c= 0 d= 0 r = .23
Module 2.2

18. As part of an assignment, Linda's class was asked to complete an anonymous questionnaire on sexual discrimination. Which research method was Linda's professor using?
a. field experiment
b. survey
c. naturalistic observation
d. laboratory experiment

Answer b % correct 97 a= 2 b= 97 c= 1 d= 0 r = .27
Module 2.2

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 % correct 95 a= 1 b= 1 c= 2 d= 95 r = .23
Module 2.2

20. 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 % correct 94 a= 1 b= 2 c= 3 d= 94 r = .25
Module 2.2

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21. The degree of relationship between two or more variables is _____.
a. correlation
b. validity
c. reliability
d. a hypothesis

Answer a % correct 97 a= 97 b=0 c= 1 d= 2 r = .09
Module 2.2

22. A researcher wished to study the relationship between high school grades and college grades. Of the following research methods, which would be the most appropriate?
a. case study
b. correlation
c. experiment
d. survey

Answer b % correct 37 a= 22 b= 37 c= 10 d= 31 r = .31
Module 2.2

23. 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 % correct 56 a= 2 b= 26 c= 56 d= 17 r = .25
Module 2.2

24. 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 % correct 87 a= 9 b= 87 c= 4 d= 0 r = .35
Module 2.2

25. 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 % correct 73 a= 11 b= 14 c= 2 d= 73 r = .42
Module 2.2

26. The survey method of research is _____ in nature.
a. correlational
b. experimental
c. field experimental
d. both correlational and field experimental group

Answer a % correct 31 a= 31 b= 9 c= 16 d= 43 r = .22
Module 2.2

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27. 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 % correct 92 a= 1 b= 3 c= 4 d= 92 r = .31
Module 2.2

28. 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 % correct 76 a= 18 b= 1 c= 76 d= 5 r = .30
Module 2.2

29. 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 % correct 78 a= 78 b= 8 c= 9 d= 4 r = .47
Module 2.2

30. 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 % correct 77 a= 2 b= 77 c= 9 d= 12 r = .34
Module 2.2

31. If explanation of the causes of thoughts, feelings, and behavior is a psychologist's goal, then the _____ method of research should be used.
a. correlational
b. experimental
c. survey
d. naturalistic observation

Answer b % correct 45 a= 15 b= 45 c= 14 d= 26 r = .52
Module 2.2

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32. 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 % correct 90 a= 3 b= 4 c= 4 d= 90 r = .42
Module 2.2

33. 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 % correct 80 a= 14 b= 5 c= 80 d= 1 r = .45
Module 2.2

34. 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 % correct 55 a= 55 b= 1 c= 5 d= 39 r = .23
Module 2.2

35. A researcher, based on his 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 % correct 76 a= 76 b= 17 c= 1 d= 6 r = .44
Module 2.2

36. 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 % correct 64 a= 24 b= 64 c= 24 d= 9 r = .43
Module 2.2

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37. The process of establishing causal relationships is associated most with:
a. naturalistic observation.
b. experiments.
c. correlation.
d. surveys.

Answer b % correct 33 a= 45 b= 33 c= 14 d= 9 r = .43
Module 2.2

38. 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 % correct 64 a= 64 b= 22 c= 10 d= 3 r = .27
Module 2.2

39. In psychological studies, randomization is used to ensure that:
a. there will be an independent and 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 % correct 84 a= 5 b= 84 c= 3 d= 7 r = .33
Module 2.2

40. The method of psychological research which 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 % correct 93 a= 93 b= 0 c= 4 d= 3 r = .21
Module 2.2

41. 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 % correct 85 a= 85 b= 8 c= 0 d= 7 r = .46
Module 2.2

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42. 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 behavior in the natural environment based on subjects' behavior in the laboratory.

Answer b % correct 71 a= 0 b= 71 c= 5 d= 23 r = .25
Module 2.2

43. In an experiment, the "measurable aspect of the behavior of the subject" is called the _____ variable.
a. dependent
b. focal
c. independent
d. control

Answer a % correct 76 a= 76 b= 1 c= 20 d= 3 r = .47
Module 2.2

44. 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 % correct 69 a= 4 b= 3 c= 24 d= 69 r = .30
Module 2.2

45. 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 % correct 68 a= 4 b= 15 c= 68 d= 13 r = .28
Module 2.2

46. 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 % correct 85 a= 85 b= 10 c= 3 d= 2 r = .40
Module 2.2

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47. 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 % correct 54 a= 15 b= 22 c= 54 d= 9 r = .30
Module 2.2

48. 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 % correct 79 a= 79 b= 7 c= 9 d= 5 r = .58
Module 2.2

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. 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 % correct 77 a= 4 b= 10 c= 77 d= 10 r = .64
Module 2.2

50. 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 % correct 90 a= 8 b= 90 c= 2 d= 0 r = .27
Module 2.2

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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 % correct 97 a= 2 b= 1 c= 0 d= 97 r = .21
Module 2.2

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 % correct 79 a= 16 b= 79 c= 3 d= 3 r = .25
Module 2.2

53. 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 % correct 82 a= 10 b= 82 c= 5 d= 3 r = 40.
Module 2.2

54. Which of the following is NOT a strength of the experiment as a research method?
a. Cause-and-effect relationships can be established.
b. Experimental conditions usually seem realistic to subjects.
c. Experiments can usually be replicated if the findings are valid.
d. Variables can be analyzed carefully because of the degree of control over them.

Answer b % correct 72 a= 11 b= 72 c= 2 d= 15 r = .23
Module 2.2

55. A "fake treatment" is one way to define a _____.
a. decoy
b. demand characteristic
c. control group
d. placebo

Answer d % correct 97 a= 2 b= 1 c= 97 d= 1 r = .20
Module 2.2

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56. 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 d % correct 81 a= 7 b= 6 c= 6 d= 81 r = .39
Module 2.2

57. 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 % correct 95 a= 0 b= 3 c= 3 d= 95 r = .34
Module 2.3

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