

United States, Canada, and many other countries must be approved by their organization or their school's Institutional Review Board (IRB). The IRB reviews all potential experiments, taking into consideration the knowledge gained versus the potential harm a study might cause. Reviewing each potential experiment is the first step in obtaining permission for the use of humans in research experiments.

When using human participants, it is important that each of the following guidelines be followed:

- Participants must provide informed consent before taking part in a study. This means that participants have agreed to be part of the experiment and are aware of what may take place during the course of the study.
- Participants must be debriefed and allowed to view the results after the experiment is completed. Debriefing subjects allows each one to know what the researchers were hoping to accomplish.
- The researcher must take necessary measures to ensure the confidentiality of all participants. All identifying information regarding participants who take part in a study is closely guarded.
- Participants who are under the age of consent (minors) must have a parent or guardian present during the experiment. This helps ensure that the participants do not suffer harmful effects.
- No participant may be psychologically or physically harmed. The experimenter must remove any potentially damaging associations before participants are released (the legacy of John Watson's "Little Albert" study, discussed in Chapter 8).

The use of animals in research is a controversial topic. Psychologists mainly use rodents and pigeons when conducting research. However, some experiments require the use of other animals, mainly primates. Any experiments using animals are subject to the strict ethical guidelines outlined in the Animal Welfare Act, the National Institute of Health's *Guide for the Care and Use of Laboratory Animals*, the National Institute of Mental Health's *Methods and Welfare Considerations in Behavioral Research with Animals*, the American Psychological Association's *Principles on Animal Use*, as well as numerous other state and federal animal usage laws.

Multiple-Choice Questions

1. Professor Jackson is conducting an experiment on the effects of chalk dust on memory retention. Two groups are given the same memory test. Participants in group A are exposed to chalk dust for 30 minutes a day, while those in group B are not exposed to chalk dust at all. Identify the dependent variable in Professor Jackson's study.
 - (A) Exposure to chalk dust
 - (B) Memory retention
 - (C) Ability to form mnemonics
 - (D) The length of time subjects were exposed to chalk dust
 - (E) The amount of time between exposures

2. If a study is considered statistically significant, we can assume that
 - (A) the study has both independent and dependent variables
 - (B) the study is conducted in a controlled environment
 - (C) all participants were debriefed after the experiment was completed
 - (D) neither the experimenter nor the participants knew which groups participants were assigned to
 - (E) there is a relatively small chance the results were caused by chance
3. Researchers concluded that subjects given a sugar pill experienced the same results as those who took actual medication. This is known as the
 - (A) confirmation bias
 - (B) placebo effect
 - (C) double-blind effect
 - (D) hindsight bias
 - (E) participation bias
4. Recent research found a correlation between the time one spends listening to heavy metal music and the number of books one reads. The correlation coefficient between these two variables was -0.83 . What does this correlation mean?
 - (A) The more a person listens to heavy metal, the more books he or she reads.
 - (B) The number of hours spent listening to heavy metal has no effect on the number of books a person reads.
 - (C) The less a person listens to heavy metal, the more books he or she reads.
 - (D) As the age of the subject increases, the number of books he or she reads decreases.
 - (E) As the age of the subject decreases, the number of books he or she reads decreases.
5. Professor Gladhand is interested in studying the effects of caffeine on the aggression levels of rats. Which of the following research methods would be most useful in reaching a cause-and-effect conclusion?
 - (A) Case study method
 - (B) Experimental method
 - (C) Naturalistic observation method
 - (D) Survey method
 - (E) Selective breeding method
6. Dr. Sanborn is interested in studying people who have sustained brain damage after ingesting banana peels. Over the past five years, he has studied only one such patient. Which of the following research methods is Dr. Sanborn most likely using?
 - (A) Naturalistic observation
 - (B) Experimental
 - (C) Survey
 - (D) Case study
 - (E) Twin studies

7. Which of the following is an example of a positive correlation?
- (A) As the number of hours a person sleeps increases, her violent behavior decreases.
 - (B) As the number of dogs a person owns decreases, her violent behavior increases.
 - (C) The less sleep a person gets, the lower her grade-point average.
 - (D) The more a person watches television, the less she reads.
 - (E) The number of reptiles a person owns has no effect on the number of emails she sends.
8. Dr. Cho is concerned that his body language might influence the outcome of his experiment. Which of the following methods should Dr. Cho use to ensure that he will not impact the results of the study?
- (A) Sampling size
 - (B) Double-blind study
 - (C) Single-blind study
 - (D) Case study method
 - (E) Survey method
9. Dr. Mallard conducted research that required 50 participants. The first 25 people that arrived on the day of the experiment were assigned to the experimental group, and the remaining 25 were assigned to the control group. Such a method of assignment may influence the results of his experiment. Instead, Dr. Mallard should have used which method of assignment?
- (A) Random sampling
 - (B) Random placement
 - (C) Random assignment
 - (D) Random selection
 - (E) Random blindness
10. In an experiment studying the effects of alcohol on memory, subjects' tolerance levels relating to alcohol consumption would be considered
- (A) the dependent variable
 - (B) the independent variable
 - (C) a confounding variable
 - (D) random assignment
 - (E) participant bias
11. Which of the following correlation coefficients would be considered to have the greatest relationship strength?
- (A) +0.78
 - (B) +0.33
 - (C) -0.56
 - (D) -0.84
 - (E) -0.14

12. Descriptive statistics
 - (A) allow the researcher to make generalizations to the wider population
 - (B) are a numerical set of data used to describe the data in a study
 - (C) are used only in rare instances
 - (D) allow the researcher to control for confounding variables
 - (E) ensure that neither the subject nor the researcher influences the outcome
13. In an experiment, the operational definition serves what function?
 - (A) To randomly assign subjects to their appropriate group
 - (B) To identify the standard deviation within a given experiment
 - (C) To identify how the dependent variable will be measured
 - (D) To identify a possible illusory correlation
 - (E) To identify any experimenter bias that may occur during the experiment
14. The three measures of central tendency are
 - (A) mean, medium, majority
 - (B) majority, median, mode
 - (C) mean, variability, reliability
 - (D) mean, median, mode
 - (E) validity, predictability, reliability
15. Professor Washburn noticed that her class's scores on their first test were between 89 and 14. Professor Washburn is describing her class's
 - (A) range
 - (B) reliability
 - (C) sample size
 - (D) standard deviation
 - (E) correlation coefficient

Free-Response Questions

1. Professor Llama believes that watching cooking shows on television increases a person's cooking ability. Design the research method that would be used to test Professor Llama's theory. Be sure to include each of the following:
 - (a) Identify which research method Professor Llama should use
 - (b) Correctly identify the independent and dependent variables
 - (c) List one potential confounding variable
2. Identify three different types of research methods commonly used in psychological research. Identify the advantages and disadvantages of each method of research.