Moore SCC 9e

Chapter 1

1. Sample surveys such as the General Social Survey and the Current Population Survey are an important kind of:

a. Census

*b. Observational Study

c. Experiment

d. Individual

A. Incorrect. A census attempts to gather information from the whole population.
B. Correct. The GSS and CPS are examples of observational studies.
C. Incorrect. Experiments actively impose treatments to effect a change. The General Social Survey and Current Population Survey do not do this.
D. Incorrect. The individuals are those that are participating in the GSS or CPS.

Text Reference: Section 1.3: Sample surveys, p. 8

2. Brian gathers data from his classmates about the computers they own:

Name	Operating System	Amount of Memory	Year Purchased
Joe	Windows XP Pro	256 mb	2003
Max	Windows ME	128 mb	2000
Sue	Mac OS X	640 mb	2004
Jean	Windows 2000	256 mb	2002
Bill	Mac OS X	1 GB	2005

What are the individuals in this data set?

*a. Brian's classmates

b. The type of operating system

c. The amount of memory

d. The year purchased

A. Correct. The individuals are those who Brian is gathering data from.
B. Incorrect. This is a variable.
C. Incorrect. This is a variable.
D. Incorrect. This is a variable.

Text Reference: Section 1.1: Talking about data: individuals and variables, p.4

3. Brian gathers data from his classmates about the computers they own:

Name	Operating System	Amount of Memory	Year Purchased
Joe	Windows XP Pro	256 mb	2003
Max	Windows ME	128 mb	2000
Sue	Mac OS X	640 mb	2004
Jean	Windows 2000	256 mb	2002
Bill	Mac OS X	1 GB	2005

Which of the variables is *not* considered to be numerical?

a. Brian's classmates

*b. The type of operating system

c. The amount of memory

d. The year purchased

A. Incorrect. This is not a variable. These are individuals.
B. Correct.
C. Incorrect. This is numerical.
D. Incorrect. This is numerical.

Text Reference: Section 1.1: Talking about data: individuals and variables, p.4

4. The Gallup Poll is an example of a(n):

*a. Sample Survey

b. Population

c. Census

d. Experiment

A. Correct. The Gallup Poll gathers data from a sample of a population. See www.gallup.com for more details.
B. Incorrect. The Gallup Poll gathers data from a sample set of individuals from a population.
C. Incorrect. The Gallup Poll does not attempt to gather information from every individual in the population. It uses a sampling of individuals from the population.
D. Incorrect. The Gallup Poll does not actively impose a treatment in order to effect a change. It is an example of a sample survey.

Text Reference: Section 1.3: Sample surveys, p. 8

5. Consider the three situations:

I. You ask a sample of doctors about the health risks involved with going out in the cold without a jacket.

II. On cold days, you record which of your classmates come to school without a jacket. Later, you record how many of those students become sick. You take notes and observe at a local gym your fellow members who go outside with a wet head and notice if they are sick when they return to the gym at a later date.

III. You find 30 adults and divide them into two groups. The first group is told not to wear jackets on cold days, the other group is told to wear jackets on cold days. You then compare the number from each group who get sick after a string of cold days.

Which of the following situations is an example of an observational study?

a. Situation I

*b. Situation II

c. Situation III

A. Incorrect. You are choosing a sample and gathering data from a survey.
B. Correct. In an observational study information is gathered by observing.
C. Incorrect. You are actively imposing a treatment. This is an experiment.

Text Reference: Section 1.2: Observational studies, p. 7

6. Consider the three situations:

I. You ask a sample of doctors about the health risks involved with going out in the cold without a jacket.

II. On cold days, you record which of your classmates come to school without a jacket. Later, you record how many of those students become sick. You take notes and observe at a local gym your fellow members who go outside with a wet head and notice if they are sick when they return to the gym at a later date.

III. You find 30 adults and divide them into two groups. The first group is told not to wear jackets on cold days, the other group is told to wear jackets on cold days. You then compare the number from each group who get sick after a string of cold days.

Which of the above situations is an example of an experiment?

a. Situation I

b. Situation II

*c. Situation III

A. Incorrect. You are not actively imposing a change/treatment on the individuals involved.
B. Incorrect. You are not actively imposing a change/treatment on the individuals involved.
C. Correct. You are actively imposing a treatment to compare differences—this is an experiment.

Text Reference: Section 1.5: Experiments, p. 12

7. What is the difference between a census and a sample survey?

a. A census looks at a larger group than a sample survey to gather information about the population.

b. A census can study many variables whereas a sample survey can only study one or two.

*c. A census attempts to include the entire population in the survey whereas a sample survey only studies some of the members of the population.

d. A census can only be conducted by a government whereas a sample survey can be conducted by anyone.

A. Incorrect. A census attempts to look at the entire population (not just a group) whereas a sample survey studies only some of the members of the population.
B. Incorrect. Both can study many variables. The difference here is that a sample survey looks at some members of the population whereas a census attempts to include the entire population.
C. Correct.

D. Incorrect. A census can be conducted by anyone who wants to gather information from every individual in the group.

Text Reference: Section 1.4: Census, p. 11

8. The Nielsen television ratings, where 25,000 U.S. households record the TV viewing of everyone in the household to get information about the viewing of all U.S. households, is an example of a(n):

a. Census

*b. Sample Survey

c. Population

d. Experiment

A. Incorrect. Not every television is monitored to what is being watched.
B. Correct. AC Nielsen looks at a sample of households to represent the population of the United States.
C. Incorrect. The AC Nielsen ratings attempt to gather data from a sample of households to represent the viewing habits of the population.
D. Incorrect. The AC Nielsen ratings is not actively imposing a treatment.

Text Reference: Section 1.3: Sample surveys, p.8

9. A local newspaper in the State of Connecticut conducts a poll on whether the people of the state believe the “No Child Left Behind” law is effective. The newspaper contacts 1000 subscribers. The population of this poll is:

a. The 1000 people surveyed

b. Those who favor or disapprove of the “No Child Left Behind” law

c. Those who are affected by “No Child Left Behind”

*d. People who live in the State of Connecticut

A. Incorrect. These are the individuals of the sample.
B. Incorrect. These are the variables that the survey is trying to gather information about.
C. Incorrect. The poll makes no mention of those who are being affected by NCLB.

D. Correct. The newspaper is using a sample survey method to gather information that will hopefully relate to all residents of Connecticut.

Text Reference: Section 1.3: Sample surveys, p. 9

10. The difference between an experiment and an observational study is:

a. An experiment tries not to change behavior, an observational study does.

b. An experiment deliberately imposes a treatment whereas an observational study measures the unintentional effects of the treatment as a result of the observation being done.

*c. An observational study tries to gather information without interfering; an experiment looks to actively impose a treatment to see how they respond.

A. Incorrect. An experiment tries to affect the participants' behavior by introducing treatments.
B. Incorrect. Observation does not deal with imposing treatments of any kind, intentional or unintentional.
C. Correct. In an observational study you can look but not touch.

Text Reference: Section 1.5: Experiments, p. 12