CHAPTER 1—
ANSWERS TO EXERCISES

1. Once our research question, the hypothesis, and the study variables have been selected, we move on to the next stage of the research process—measuring and collecting the data. The choice of a particular data collection method or instrument depends on our study objective. After our data have been collected, we have to find a systematic way to organize and analyze our data and set up some set of procedures to decide what we mean.

2.
   a. Democrats and Independents are more likely to support the Affordable Care Act than Republicans.
   b. Whites have greater incomes than any other race. Hispanics have incomes greater than blacks but less than whites.
   c. As the number of police in a city increases, the crime rate will decrease.
   d. Life satisfaction may vary with marital status, with satisfaction higher among married persons than those not married.
   e. Younger adults are more likely to support the legalization of marijuana than older adults.
   f. Ethnic minority families are more likely to arrange in-home care (vs. formal institutional care) for their elderly parents than nonminority families.

3.
   a. Interval-ratio
   b. Interval-ratio
   c. Nominal
   d. Ordinal
   e. Nominal
   f. Interval-ratio
   g. Ordinal

4.
   a. Discrete
   b. Continuous
   f. Continuous

5. There are many possible variables from which to choose. Some of the most common selections by students will probably be as follows: type of occupation or industry, work experience, and educational training or expertise. Students should first address the relationship between these variables and gender. Students may also consider measuring structural bias or discrimination.

6.

    a. Unemployment records could be used to determine the actual number of unemployed; a descriptive statistic based on the population.

    b. A survey is taken to estimate student opinions about the quality of food; inferential statistic.

    c. National health records can be used to determine the incidence rate of breast cancer among all Asian women, so this would be a descriptive statistic.

    d. The ratings will be gathered from a survey, so this is inferential.

    e. A university should be able to report GPA by major, so this is a descriptive statistic based on the population.

    f. In theory, the United States records all immigrants to this country. Therefore, the number of South East Asian immigrants would be a descriptive statistic. However, because of illegal immigration, surveys are also taken to estimate the total number of legal and unauthorized immigrants. In that event, the number of immigrants would be an inferential statistic.

7.

    a. Annual income

    b. Gender—nominal; Number of hours worked per week—interval-ratio; Years of education—interval-ratio; Job title—nominal.

    c. This is an application of inferential statistics. She is using information based on her sample to predict the annual income of a larger population of young graduates.

8. At the nominal level, a simple measure of political participation is whether or not someone voted in the most recent general election. This variable would be coded either " yes" or " no."

At the ordinal level, a composite measure could be constructed of both voting and political party membership, like this:

Behavior	Code
Didn't vote, no membership	0
Voted, no membership OR Membership, didn't vote	1
Voted and membership	2

These codes are ordinal in scale because the amount of political participation can be ranked from high to low. Other possible ordinal variables can be constructed from other sets of behaviors, such as working in a candidate's campaign, signing a petition, and so forth. The key points are to create a variable whose values can be ranked and whose values are not on an interval-ratio scale.

At the interval-ratio level, political participation could be measured by the percentage of elections in which a person has voted since becoming eligible to vote or the amount of money a person donated to political candidates during some specified time period.

9.

    a. Individual age: This variable could be measured as an interval-ratio variable, with actual age in years reported. As discussed in the chapter, interval-ratio variables are the highest level of measurement and can also be measured at ordinal or nominal levels.

b. Annual income: This variable could be measured as an interval-ratio variable, with actual dollar earnings reported.

c. Religiosity: This variable could be measured in several ways. For example, as church attendance, the variable could be ordinal (number of times attended church in a month: every week, at least twice a month, less than two times a month, none at all).

d. Student performance: This could be measured as an interval-ratio variable as GPA or test score.

e. Social class: This variable is an ordinal variable, with categories low, working, middle, and upper.

f. Number of children: This variable could be measured in several ways. As an interval-ratio measure, the actual number of children could be reported. As an ordinal measure, the number of children could be measured in categories: 0, 1–2, 3–4, 5 or more. This could also be a nominal measurement—do you have children? Yes or No.