1. Identify each of the following as either descriptive or inferential statistics.
   a. The average salary of a random sample of 50 high school teachers in 2010 was $52,400.

   b. Based on a random sample, it was concluded that the average cost of a hotel room in Chicago was greater than one in Atlanta.

   c. A study has concluded that the average credit card debt of college graduates has increased from the year 2009 to 2010.

   d. The average Amazon.com rating of the book *The Complete Idiot's Guide to Statistics* by 26 reviewers is 4.6 on a scale of 1 to 5.

   e. The average American viewer watches 151 hours of TV per month.

2. Determine whether the underlined value is a parameter or a statistic.
   a. In a national survey on substance abuse, 10% of respondents aged 12 to 17 reported using illicit drugs within the past month.

   b. Ty Cobb is one of major league baseball's greatest hitters of all time, with a career batting average of 0.366.

   c. A study of 6076 adults in public rest rooms (in Atlanta, Chicago, New York City, and San Francisco) found that 23% did not wash their hands before exiting.

   d. Interview of 100 adults 18 years of age or older, conducted nationwide, found that 44% could state the minimum age required for the office of US president.

3. For each of the following variables, determine whether the variable is qualitative or quantitative.

a. Name of Internet service provider

b. Time in hours spent surfing the Internet per week

c. Number of text messages sent in a week

d. Number of online purchases made in a month

e. Whether the individual has a Facebook profile

f. For each of the following determine the type of bias.
   i. A retail store manager wants to conduct a study regarding the shopping habits of his customers. He selects the first 60 customers who enter his store on a Saturday morning.

   ii. A polling organization conducts a study to estimate the percentage of households that speaks a foreign language as the primary language. It mails a questionnaire to 1023 randomly selected households throughout the United States and asks the head of household if a foreign languages is the primary language spoken in the home. Of the 1023 households selected, 12 responded.

   iii. A newspaper article reported, "The *Cosmopolitan* magazine survey of more than 5000 Australian women aged 18-34 found about 42 percent considered themselves overweight or obese."

4. Consider the following two questions:
   a. Do you believe that the government should or should not be allowed to prohibit individuals from expressing their religious beliefs at their place of employment?

   b. Do you believe that the government should or should not be allowed to prohibit teachers from expressing their religious beliefs in public school classrooms?

5. Do you think the order in which the questions are asked may affect the survey results (measurement error)? If so, what can the pollster do to alleviate this bias?

1. Identify each of the following as either descriptive or inferential statistics.
 a. The average salary of a random sample of 50 high school teachers in 2010 was $52,400.

descriptive

b. Based on a random sample, it was concluded that the average cost of a hotel room in Chicago was greater than one in Atlanta.

inferential

c. A study has concluded that the average credit card debt of college graduates has increased from the year 2009 to 2010.

inferential

d. The average Amazon.com rating of the book *The Complete Idiot's Guide to Statistics* by 26 reviewers is 4.6 on a scale of 1 to 5.

descriptive

e. The average American viewer watches 151 hours of TV per month.

inferential

2. Determine whether the underlined value is a parameter or a statistic. a. In a national survey on substance abuse, 10% of respondents aged 12 to 17 reported using illicit drugs within the past month.

statistic

b. Ty Cobb is one of major league baseball's greatest hitters of all time, with a career batting average of 0.366.

parameter

c. A study of 6076 adults in public rest rooms (in Atlanta, Chicago, New York City, and San Francisco) found that 23% did not wash their hands before exiting.

statistic

d. Interview of 100 adults 18 years of age or older, conducted nationwide, found that 44% could state the minimum age required for the office of US president.

statistic

3. For each of the following variables, determine whether the variable is qualitative or quantitative.
a. Name of Internet service provider

qualitative

b. Time in hours spent surfing the Internet per week

quantitative

c. Number of text messages sent in a week

quantitative

d. Number of online purchases made in a month

quantitative

e. Whether the individual has a Facebook profile

qualitative

4. For each of the following determine the type of bias.

a. A retail store manager wants to conduct a study regarding the shopping habits of his customers. He selects the first 60 customers who enter his store on a Saturday morning.

Selection bias

b. A polling organization conducts a study to estimate the percentage of households that speaks a foreign language as the primary language. It mails a questionnaire to 1023 randomly selected households throughout the United States and asks the head of household if a foreign languages is the primary language spoken in the home. Of the 1023 households selected, 12 responded.

non-response bias

c. A newspaper article reported, "The *Cosmopolitan* magazine survey of more than 5000 Australian women aged 18-34 found about 42 percent considered themselves overweight or obese."

Selection bias

5. Consider the following two questions: a. Do you believe that the government should or should not be allowed to prohibit individuals from expressing their religious beliefs at their place of employment?
b. Do you believe that the government should or should not be allowed to prohibit teachers from expressing their religious beliefs in public school classrooms?

Do you think the order in which the questions are asked may affect the survey results (measurement error)? If so, what can the pollster do to alleviate this bias?
Yes I do think the order of the questions may affect the survey results. The pollster could randomize the order the questions are administered to each participant.