

Chapter 2: Data – Quiz A Name _____

1. The mission of the *Pew Internet & Life Project* is to “explore the impact of the Internet on families, communities, work, home, and daily life.” In August – September 2007 they conducted telephone interviews with a sample of American adults aged 18 and older about online shopping. Describe the W’s for the information given.

- Who:
- What:
- When:
- Where:
- How:
- Why:

2. The following table displays some of the data collected in the *Pew Internet & Life Project* about online shopping. List the variables in the data set. Indicate whether each variable is categorical or quantitative. If the variable is quantitative, give the units.

| <i>Age</i> | <i>Gender</i> | <i>Household Income</i> | <i>Participated in online auction?</i> | <i>Monthly amount spent online</i> | <i>Time (hours) per week browsing online retailers</i> |
|------------|---------------|-------------------------|--|------------------------------------|--|
| 25 | Male | \$55,000 | Yes | \$250 | 6 |
| 47 | Female | \$60,000 | No | \$50 | 4 |
| 38 | Female | \$110,000 | No | \$120 | 10 |
| 30 | Male | \$62,000 | No | \$75 | 4 |

3. In addition to the variables listed above, data were also collected on the variables listed below. Indicate whether each is nominal or ordinal.

- *Region* (Urban, Suburban, Rural)
- *Education* (Less than High School, High School, Some College, College +)
- *Marital Status* (Single, Widowed, Divorced, Married)

4. For each of the following, indicate whether the data are cross-sectional or time series:

- *Weekly receipts at a clothing boutique*
- *Monthly demand for an automotive part*
- *Percentage of adults who bank online*

Business Statistics: Chapter 2: Data – Quiz A – Key

1. The mission of the *Pew Internet & Life Project* is to “explore the impact of the Internet on families, communities, work, home, and daily life.” In August – September 2007 they conducted telephone interviews with a sample of American adults aged 18 and older about online shopping. Describe the W’s for the information given.

- Who:
American adults aged 18 and older
- What:
online shopping
- When:
August – September 2007
- Where:
United States
- How:
telephone interviews
- Why:
to explore the impact of the Internet on daily life, specifically shopping

2. The following table displays some of the data collected in the *Pew Internet & Life Project* about online shopping. List the variables in the data set. Indicate whether each variable is categorical or quantitative. If the variable is quantitative, give the units.

| <i>Age</i> | <i>Gender</i> | <i>Household Income</i> | <i>Participated in online auction?</i> | <i>Monthly amount spent online</i> | <i>Time (hours) per week browsing online retailers</i> |
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| 25 | Male | \$55,000 | Yes | \$250 | 6 |
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| 38 | Female | \$110,000 | No | \$120 | 10 |
| 30 | Male | \$62,000 | No | \$75 | 4 |

Categorical: Gender, Participated in online auction?

Quantitative: Age (years), Household Income (\$), Monthly online spending (\$), Browsing time per week (hours).

3. In addition to the variables listed above, data were also collected on the variables listed below. Indicate whether each is nominal or ordinal.

- *Region* (Urban, Suburban, Rural)
Nominal

- *Education* (Less than High School, High School, Some College, College +)

Ordinal

- *Marital Status* (Single, Widowed, Divorced, Married)

Nominal

4. For each of the following, indicate whether the data are cross-sectional or time series:

- *Weekly receipts at a clothing boutique*

Time Series

- *Monthly demand for an automotive part*

Time Series

- *Percentage of adults who bank online*

Cross-Sectional

Chapter 2: Data – Quiz B Name _____

1. *Consumer Reports Health* routinely compares drugs in terms of effectiveness and safety. In summer 2008 they reviewed drugs used to treat arthritis. Information was reported on convenience of use (how many pills required each day), possible side effects (e.g., dizziness, stomach upset), cost, and ratings of effectiveness in relieving symptoms (very effective, somewhat effective, not effective). Describe the W's for the information given.

- Who:
- What:
- When:
- Where:
- How:
- Why:

2. List the variables reported in the *Consumer Reports Health* article on drugs used to treat arthritis. If the variable is quantitative, give the units. If the variable is categorical, indicate whether it is nominal or ordinal.

3. The Human Resources Department of a large corporation maintains records on its employees. The table displays some of these data. List the variables in the data set. Indicate whether each variable is categorical or quantitative. If the variable is quantitative, give the units. If the variable is categorical, indicate whether it is nominal or ordinal.

| <i>Age</i> | <i>Employment Category</i> | <i>Education</i> | <i>Participates in Wellness Program?</i> | <i>Paycheck Benefit Deductions</i> |
|------------|----------------------------|------------------|--|------------------------------------|
| 32 | Clerical | High School | Yes | \$250 |
| 52 | Professional | College | No | \$120 |
| 60 | Professional | Junior College | Yes | \$0 |
| 28 | Clerical | High School | No | \$120 |

4. For each of the following, indicate whether the data are cross-sectional or time series:

- *Company quarterly profits*
- *Percentage of American adults who work full time*
- *Historical closing stock prices*

Chapter 2: Data – Quiz B – Key

1. *Consumer Reports Health* routinely compares drugs in terms of effectiveness and safety. In summer 2008 they reviewed drugs used to treat arthritis. Information was reported on convenience of use (how many pills required each day), possible side effects (e.g., dizziness, stomach upset), cost, and ratings of effectiveness in relieving symptoms (very effective, somewhat effective, not effective). Describe the W's for the information given.

- Who:
drugs to treat arthritis currently on the market

- What:
convenience of use, side effects, cost, effectiveness ratings

- When:
summer 2008

- Where:
not specified, probably United States

- How:
testing on drugs

- Why:
information for potential consumers/patients

2. List the variables reported in the *Consumer Reports Health* article on drugs used to treat arthritis. If the variable is quantitative, give the units. If the variable is categorical, indicate whether it is nominal or ordinal.

Categorical: Side effect (nominal), effectiveness rating (ordinal)

Quantitative: Convenience of use (number of pills), Cost (\$)

3. The Human Resources Department of a large corporation maintains records on its employees. The table displays some of these data. List the variables in the data set. Indicate whether each variable is categorical or quantitative. If the variable is quantitative, give the units. If the variable is categorical, indicate whether it is nominal or ordinal.

| <i>Age</i> | <i>Employment Category</i> | <i>Education</i> | <i>Participates in Wellness Program?</i> | <i>Paycheck Benefit Deductions</i> |
|------------|----------------------------|------------------|--|------------------------------------|
| 32 | Clerical | High School | Yes | \$250 |
| 52 | Professional | College | No | \$120 |
| 60 | Professional | Junior College | Yes | \$0 |
| 28 | Clerical | High School | No | \$120 |

Categorical: Employment Category (nominal), Education (ordinal), Participation in Wellness Program? (nominal)

Quantitative: Age (years), Paycheck Benefit Deductions (\$)

4. For each of the following, indicate whether the data are cross-sectional or time series:

- *Company quarterly profits*

Time Series

- *Percentage of American adults who work full time*

Cross-Sectional

- *Historical closing stock prices*

Time Series

Chapter 2: Multiple Choice Quiz C Name _____**2.1. Provide context for data.**

1. In the fall of 2007, the *Pew Internet & Life Project* conducted telephone interviews with a sample of American adults aged 18 and older about online shopping. American adults aged 18 and older constitute the _____ of the study.

- A. Who
- B. What
- C. When
- D. Where
- E. How

2.2. Identify cases, variables, and any units.

2. A few of the variables for which data were collected in the *Pew Internet & Life Project* study about online shopping include age, gender, income, and number of hours spent shopping online per month. Which of the variables is categorical?

- A. Age
- B. Gender
- C. Income
- D. Number of hours spent shopping online
- E. None

2.2. Identify cases, variables, and any units.

3. The *Pew Internet & Life Project* study about online shopping asked respondents to indicate their education level on the following scale: *Less than High School, High School, Some College, College +*. Which of the following statements is (are) true?

- A. Education level is a categorical variable.
- B. Education level is nominal scaled.
- C. Education level is ordinal scaled.
- D. Both A and B
- E. Both A and C

2.1. Provide context for data.

4. *Consumer Reports Health* routinely compares drugs in terms of effectiveness and safety. In summer 2008 they reviewed drugs used to treat arthritis. Among the information reported was convenience of use (how many pills required each day) and possible side effects (e.g., dizziness, stomach upset). Convenience of use and possible side effects constitute the _____ of the study.

- A. Who
 - B. What
 - C. When
 - D. Where
 - E. How
-

2.1. Provide context for data.

5. What is the “Who” in a *Consumer Reports Health* study on the effectiveness and safety of drugs used to treat arthritis?
- A. drugs to treat arthritis currently on the market
 - B. convenience of use and possible side effects
 - C. summer 2008
 - D. the United States
 - E. testing on drugs

2.2. Identify cases, variables, and any units.

6. A *Consumer Reports Health* study on the effectiveness and safety of arthritis drugs collected data on possible side effects. This is what kind of variable?
- A. Quantitative
 - B. Categorical
 - C. Nominal
 - D. Both A and C
 - E. Both B and C

2.2. Identify cases, variables, and any units.

7. A *Consumer Reports Health* study on arthritis drugs takes into consideration cost. Cost is
- A. is a nominal variable.
 - B. is a categorical variable.
 - C. is a quantitative variable.
 - D. is an ordinal variable.
 - E. is an irrelevant variable.

2.2. Identify cases, variables, and any units.

8. The Human Resources Department of a large corporation maintains records on its employees. Data are maintained of the following variables: *Age, Employment Category, Education, Whether or not the employee participates in a wellness program, and Paycheck benefit deductions*. Which of these variables are categorical?
- A. *Age, Employment Category, and Education*
 - B. *Employment Category, Education, and Whether or not the employee participates in a wellness program*
 - C. *Education, Whether or not the employee participates in a wellness program, and Paycheck benefit deductions*
 - D. All of the variables
 - E. None of the variables

2.2. Identify time series and cross-sections.

9. Which of the following is (are) based on cross sectional data?

- A. Company quarterly profits
- B. Percentage of American adults who work full time
- C. Historical closing stock prices
- D. All of the above
- E. None of the above.

2.2. Identify time series and cross-sections.

10. Which of the following is (are) time series data?

- A. Weekly receipts at a clothing boutique
- B. Monthly demand for an automotive part
- C. Quarterly sales of automobiles
- D. All of the above
- E. None of the above

Chapter 2: Multiple Choice Quiz C – Key

- 1. A
- 2. B
- 3. E
- 4. B
- 5. A
- 6. E
- 7. C
- 8. B
- 9. B
- 10. D

Chapter 2: Multiple Choice Quiz D Name _____

2.1. Identify cases, variables, and any units.

1. A university is interested in gauging student satisfaction in its online MBA program. A survey is designed and administered via the Internet to a sample of students currently active in the program. Which of the following would best describe the cases?

- A. Participants
- B. Respondents
- C. Experimental Units
- D. Subjects
- E. Variables

2.2. Identify cases, variables, and any units.

2. In a survey undertaken by a university to gauge student satisfaction in its online MBA program, one question asked students to indicate their employment status (unemployed, employed part-time, employed full-time). Which of the following is true?

- A. This variable is categorical.
- B. This variable is quantitative.
- C. This is an identifier variable.
- D. Both A and C.
- E. Both B and C.

2.2. Identify cases, variables, and any units.

3. In a survey undertaken by a university to gauge student satisfaction in its online MBA program, one question asked students to indicate the number of credits they had transferred into the program. Which of the following is true?

- A. This variable is categorical.
- B. This variable is transactional.
- C. This variable is quantitative.
- D. This is an identifier variable.
- E. This variable is nominal.

2.1. Identify cases, variables, and any units.

4. Researchers in e-commerce design an experiment to determine what factors are most important to online consumers when completing a transaction via the Internet. Individuals perform tasks on a set of Web sites and record their impressions about various attributes. Which of the following would best describe the cases?

- A. Participants
- B. Respondents
- C. Experimental Units
- D. Transactions
- E. Variables

2.2. Identify cases, variables, and any units.

5. A popular travel magazine regularly reviews hotels worldwide. In a recent issue, it focused on hotels in Hawaii. Among the variables for which it provided data was whether or not the hotel included a spa. This is a

- A. quantitative variable.
- B. identifier variable.
- C. ordinal variable.
- D. categorical variable.
- E. transactional variable.

2.2. Identify cases, variables, and any units.

6. A popular travel magazine regularly reviews hotels worldwide. In a recent issue, it focused on hotels in Hawaii. Among the variables for which it provided data was the price range for rooms with an ocean view. Which of the following statements is true?

- A. These data are transactional.
- B. This variable is quantitative and the units are \$.
- C. This variable is quantitative and the units are number of rooms.
- D. This variable is qualitative and ordinal.
- E. These data are time series.

2.2. Identify cases, variables, and any units.

7. A mid-priced chain of hotels, *Hometown Suites*, strives to make its guests “feel at home” by providing amenities such as microwaves in every room. Comment cards are used to get feedback on the importance of such amenities by asking guests to rate them using the scale: ___ Essential ___ Important ___ Not Important. These data are

- A. qualitative.
- B. nominal.
- C. ordinal.
- D. both A and B.
- E. both A and C.

2.3. Identify data sources.

8. A locally owned spa, *Alexander's*, is interested in adding a tea room that not only offers specialty teas but an organic lunch menu. In order to determine how many of its regular customers would be interested in such an addition, *Alexander's* sent out a short e-mail questionnaire. The source of these data is

- A. the Internet.
- B. transactional.
- C. a designed survey.
- D. a designed experiment.
- E. secondary.

2.2. Identify time series and cross-sections.

9. A locally owned spa, *Alexander's*, is interested in adding a tea room that not only offers specialty teas but an organic lunch menu. In order to determine how many of its regular customers would be interested in such an addition, *Alexander's* sent out a short e-mail questionnaire. One question asked its customers to indicate how much they spend monthly on all natural, organic products. These data are

- A. cross-sectional.
- B. time series.
- C. categorical.
- D. transactional.
- E. experimental.

2.2. Identify time series and cross-sections.

10. A mid-priced chain of hotels, *Hometown Suites*, collects data on monthly occupancy rates for forecasting and planning purposes. These data are

- A. cross-sectional.
- B. time series.
- C. categorical.
- D. transactional.
- E. experimental.

Chapter 2: Multiple Choice Quiz D – Key

- 1. B
- 2. A
- 3. C
- 4. A
- 5. D
- 6. B
- 7. E
- 8. C
- 9. A
- 10. B