# *Statistics for Business Decision Making and Analysis 3rd edition Stine Test Bank*

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# Quiz A

***Objectives:***

- Organize data into a table with multiple variables (columns) and cases (rows).
- Read and interpret data tables.
- Distinguish categorical from numerical variables. Be aware that some categorical variables (ordinal) define an ordering of the cases.
- Recognize time series data.
- Identify when recoding or aggregating data are useful.
- Understand additional attributes of data.

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The camping permit at a state park asks that the person who is registering supply the following: Date, Name, Group Size, and the Zip Code for the person filling out the permit. The park management maintains a data table that records this information for each person who registers.

*Section 2.1 – Data Tables*
*[Objective: Organize data into a table with multiple variables (columns) and cases (rows).]*

**1.** On a particular day, 27 persons filled out a permit application. How many rows will be in the data table for that day?
**(a)** 27
**(b)** 4
**(c)** 108
**(d)** 31

**2.** On a particular day, 27 persons filled out a permit application. How many columns will be in the data table for that day?
**(a)** 27
**(b)** 4
**(c)** 108
**(d)** 31

*Section 2.2 – Categorical and Numerical Data*
*[Objective: Distinguish categorical from numerical variables. Be aware that some categorical variables (ordinal) define an ordering of the cases.]*

**3.** Identify each piece of information by the type of variable it represents:

DATE

NAME

GROUP SIZE

ZIP CODE

*Section 2.3 – Recoding and Aggregation*
*[Objective: Identify when recoding or aggregating data are useful.]*

**4.** For a mid-summer report, the park manager decides to use the Zip Code to generate a column for the data table that is labeled "INSTATE" with categories "Yes" and "No." This column will identify the person registering as being from within the state or from a different state. This procedure is an example of _____ data.

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**(a)** aggregating
**(b)** recoding
**(c)** time series
**(d)** observing

**5.** At the end of the summer, the park manager creates a new data table using the information from each day's permit applications. The new data table consists of Date and the Total Number of Campers on that date. This is an example of _____ the data, and generating results in data that are referred to as a _____.
**(a)** recoding; cross section
**(b)** aggregating; cross section
**(c)** recoding; time series
**(d)** aggregating; time series

*Section 2.4 – Time Series*
*[Objective: Recognize time series data.]*
**6.** The manager wishes to use the data table from question 4 to produce a graph showing the Total Number of Campers for each day of the summer. What type of graph is most appropriate for this data?
**(a)** Bar graph
**(b)** Time Series
**(c)** Time plot
**(d)** Histogram

*Section 2.2 – Categorical and Numerical Data*
*[Objective: Distinguish categorical from numerical variables. Be aware that some categorical variables (ordinal) define an ordering of the cases.]*
**7.** Each camper at the park is asked to fill out a survey which reads as follows: "We are interested in knowing your return status. Are you planning to return to this park for camping next summer? Circle **the number** corresponding to your response." Campers are also asked to supply their Zip Code. The camper will circle one of the **numbers** below, depending on their status.

| NO | UNLIKELY | UNSURE | LIKELY | YES |
|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 |

The summary of the data from the responses consists of the "Zip Code," and the "Return Status" of the camper. What type of variable is "Return Status"?
**(a)** Ordinal
**(b)** Numerical
**(c)** Categorical
**(d)** Likert

Publishers track sales data from Amazon.com. Typical tracking variables include book purchased, date of purchase, form of purchase (hardback, paperback, ebook, used), rating of purchase, and any comments

*Section 2.4 – Time Series*
*[Objective: Recognize time series data.]*
**8.** From the information provided, give an example of two variables that would result in time series data.

**9.** From the information provided, give an example of two variables that would results in cross-sectional data.

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*Section 2.3 – Recoding and Aggregation*
*[Objective: Recognize time series data.]*

**10.** An author wants to look at the Amazon.com data pertaining to her book. She creates a table that includes form of purchase, the frequency of each form, and the total amount of purchase for each form. What is this an example of?
**(a)** Aggregating the data
**(b)** Recoding the data
**(c)** Observing the data
**(d)** Graphing the data

The owner of a shoe store records sales in a data table. Below is an excerpt from that table showing the activity of some of the store's regular customers for the past month.

| Customer | Brand | Type | Size | Cost ($) |
|---|---|---|---|---|
| Bill | Merrell | Hiking | 11 | 95 |
| Ann | ASICS | Running | 8 | 59 |
| Josh | New Balance | Running | 10 | 65 |
| Ann | Nine West | Pump | 8 | 105 |
| Bill | Nike | Walking | 10.5 | 79 |

*Section 2.1 – Data Tables*
*[Objective: Read and interpret data tables.]*

**11.** In this month, how much did Ann spend?
**(a)** $16
**(b)** $59
**(c)** $174
**(d)** $164

**12.** One variable in this data table is _____.

*Section 2.5 – Further Attributes of Data*
*[Objective: Understand additional attributes of data.]*

**13.** While on the Internet, you discover a data table that someone reproduced on their personal website. The data seems related to your own work. Before you incorporate the data into your work, what additional attribute of the data is the most important for you to determine?
**(a)** The name of the person that reproduced the data
**(b)** The time of day the data was posted
**(c)** The original source of the data
**(d)** Where the website is located

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## Answers:

1. A
2. B
3. Date – Ordinal; Name – Categorical; Group Size – Numerical; Zip Code – Categorical
4. B
5. D
6. C
7. A
8. Date of Purchase and an additional Variable (Answers will vary)
9. Answers will vary.
10. A
11. D
12. Answers will vary. Correct answer is one of Customer, Brand, Type, Size, or Cost.
13. C

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# Quiz B

***Objectives:***

- Organize data into a table with multiple variables (columns) and cases (rows).
- Read and interpret data tables.
- Distinguish categorical from numerical variables. Be aware that some categorical variables (ordinal) define an ordering of the cases.
- Recognize time series data.
- Identify when recoding or aggregating data are useful.
- Understand additional attributes of data.

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A medical center obtains the following information for each patient that visits the office: Date, Name, Gender, an Identification Number, the Procedure Performed, and the Total Charge for the visit. A data table is used to organize the information collected each day.

*Section 2.1 – Data Tables*
*[Objective: Organize data into a table with multiple variables (columns) and cases (rows).*

**1.** For a given day, 20 patients visited the office. How many columns would the data table have for that particular day?
**(a)** 20 **(b)** 6 **(c)** 120 **(d)** 26

*Section 2.2 – Categorical and Numerical Data*
*[Objective: Distinguish categorical from numerical variables. Be aware that some categorical variables (ordinal) define an ordering of the cases.*

**2.** The Identification Number for each patient represents which type of variable:
**(a)** Numerical **(b)** Categorical **(c)** Time Series **(d)** Observation

*Section 2.3 – Recoding and Aggregation*
*[Objective: Identify when recoding or aggregating data are useful.]*

**3.** At the end of each month, a new column is created for the data table using the information contained in "Procedure Performed." The new column is labeled "Procedure Type" with categories "Surgical" and "Non-Surgical." This modification is an example of:
**(a)** Aggregation **(b)** An ordinal variable **(c)** Cases **(d)** Re-coding **(e)** A Likert Scale

**4.** At the end of each quarter, a data table is created with a column for "Gender" with categories "Male" and "Female," a column for the Total Number of each gender that visited the center during that quarter, and a column with the Total Charges for each gender that quarter. This procedure is an example of:
**(a)** Aggregation **(b)** Re-coding **(c)** A Likert Scale **(d)** Time Series
**(e)** Change in frequency

*Section 2.4 – Time Series*
*[Objective: Recognize time series data.]*

**5.** Another data table is created at the end of the quarter with a column for "Date" and a column for the "Total Charges" for that date. This summary provides:
**(a)** An aggregation **(b)** A time series **(c)** A Likert scale **(d)** An ordinal variable
**(e)** A timeplot

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*Section 2.2 – Categorical and Numerical Data*
*[Objective: Distinguish categorical from numerical variables. Be aware that some categorical variables (ordinal) define an ordering of the cases.]*

**6.** Before leaving the center, patients are asked to respond to a survey concerning the amount of time they had to wait before seeing a doctor. The survey reads as follows: "Please circle the appropriate **number** below concerning the length of time you waited to see a doctor. Was the length of time you had to wait:"

| Brief | About what you expected | Long | Inconveniently Long |
|---|---|---|---|
| 1 | 2 | 3 | 4 |

Based on the results, another column is added to the data table with the heading "Length of Wait" and the number circled by the patient is recorded. Which type of variable is "Length of Wait"?

**(a)** Numerical **(b)** Ordinal **(c)** Nominal **(d)** Re-coded **(e)** An aggregation

A credit card company creates a table of its 50,000 customers. The table records the Account Number, Payment Due, Total Expenditures, Due Date, Paid (Yes or No), Amount Paid and Credit Limit.

*Section 2.1 – Data Tables*
*[Objective: Organize data into a table with multiple variables (columns) and cases (rows).]*

**7.** How many cases will this table have?

**(a)** 7 **(b)** 8 **(c)** 50,000 **(d)** cannot determine from information given

*Section 2.2 – Categorical and Numerical Data*
*[Objective: Distinguish categorical from numerical variables. Be aware that some categorical variables (ordinal) define an ordering of the cases.]*

**8.** In the table, what type of variable is Payment Due?

**(a)** Numerical **(b)** Categorical **(c)** Time Series **(d)** Observation

*Section 2.3 – Recoding and Aggregation*
*[Objective: Identify when recoding or aggregating data are useful.*

**9.** Which of the following is a good example of aggregation?

**(a)** Creating a new column titled Overdue that records a "YES" if a customer is past due on their payment and a "NO" if the customer paid the amount due by the due date.

**(b)** Create an additional table of Credit Limit, the frequency in each credit limit bracket, and the total expenditures in each credit limit bracket.

*Section 2.4 – Time Series*
*[Objective: Recognize time series data.]*

**10.** A financial advisor wants to look at a client's net returns over the past 10 years for each of the client's mutual funds. Determine (a) if the situation describes time series or cross-sectional data (b) Give a name to each variable in the data table and determine if the variable is categorical or numerical.

The data table below represents a portion of the records a company keeps of its employees. HLOEA stands for "Highest Level of Education Attained" where 0 through 6 represent HS, BA, BS, MA, MS, MBA, and PHD respectively.

| Employee | Years | HLOEA | Dept. |
|---|---|---|---|
| John A. | 5 | 1 | Finance |
| Betty C. | 10 | 0 | Sales |
| Lorrie M. | 12 | 6 | Research |
| Fred G. | 8 | 2 | IT |

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| | | | |
|---|---|---|---|
| Todd B. | 9 | 1 | Sales |
| Susan L. | 11 | 5 | Marketing |

*Section 2.1 – Data Tables*
*[Objective: Read and interpret data tables.]*

**11.** What type of variable is HLOEA? Does it make sense to average the values of this variable?
- **(a)** Ordinal; Yes, an average makes sense.
- **(b)** Categorical; No, an average does not make sense.
- **(c)** Ordinal; No, an average does not make sense.
- **(d)** Categorical; Yes, an average makes sense.

**12.** Criticize the choice of variables in this table.

*Section 2.5 – Further Attributes of Data*
*[Objective: Understand additional attributes of data.]*

**13.** A survey claims that 91% of consumers of energy drinks prefer the 8HrNRG brand. Before you quote this number, what should you first do?
- **(a)** Ask friends if they drink 8HrNRG
- **(b)** Determine if the 8HrNRG company conducted the survey
- **(c)** Find the times the respondents answered the survey
- **(d)** Watch commercials for 8HrNRG

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## Answers

1. B
2. B
3. D
4. A
5. B
6. B
7. C
8. A
9. B
10. (a) time series (b) Mutual Fund Name – categorical, Net Return – numerical (in dollars), Year – numerical
11. B
12. Answers will vary but should criticize the use of an acronym (HLOEA) and using numbers to represent college degrees.
13. B

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