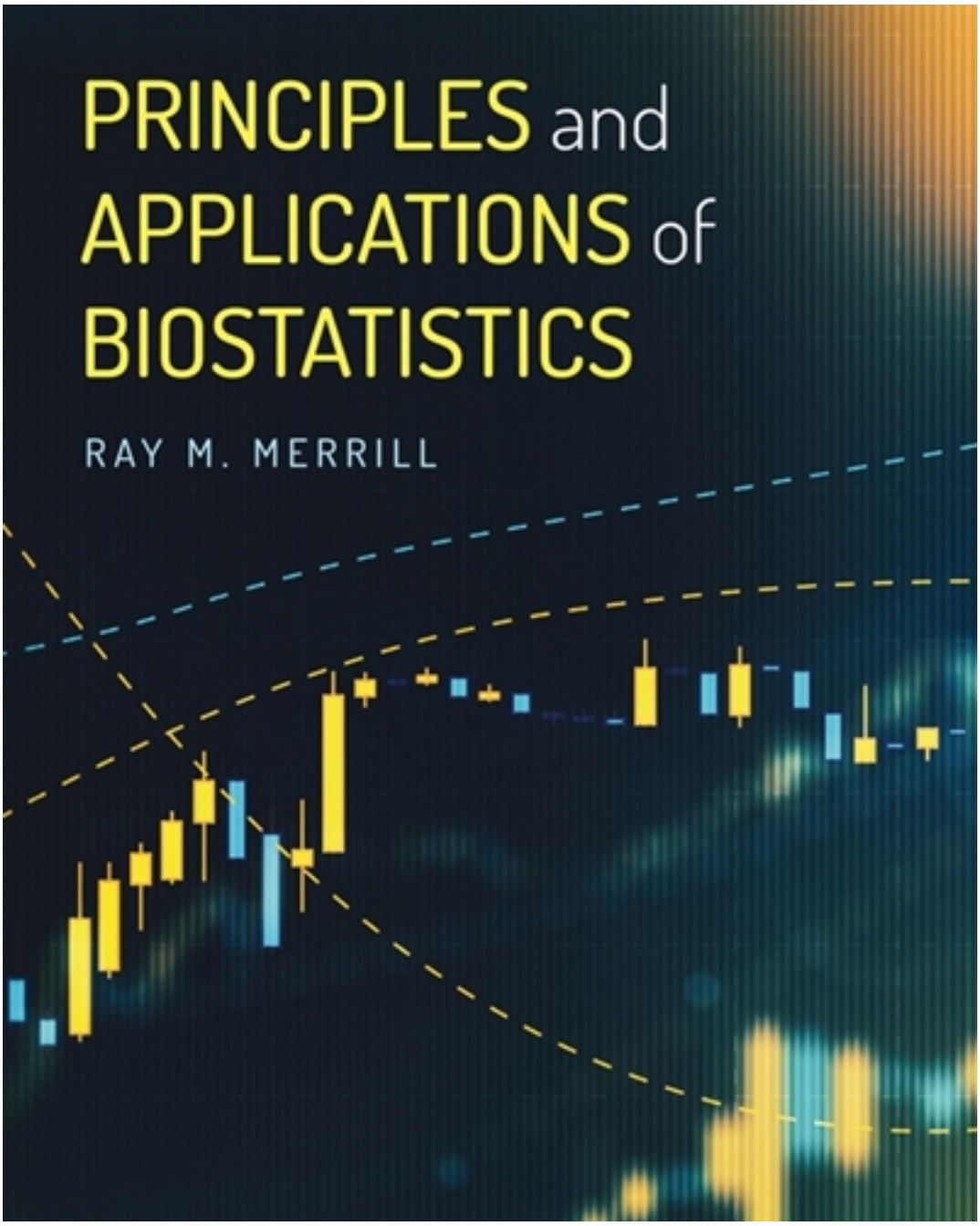
Test Bank for Principles and Applications of Biostatistics 1st Edition by Merrill



Test Bank

Import Settings:
Base Settings: Brownstone Default
Information Field: Complexity
Information Field: Ahead
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Highest Answer Letter: G
Multiple Keywords in Same Paragraph: No
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Chapter: Chapter 01 – Test Bank

Multiple Choice

1. Categorical data may also be called qualitative data.
    A) True
    B) False

Ans: A
Complexity: Easy
Ahead: Data
Subject: Chapter 1
Chapter: Introduction to Statistics

2. Numerical data may also be called quantitative data.
    A) True
    B) False

Ans: A
Complexity: Easy
Ahead: Data
Subject: Chapter 1
Chapter: Introduction to Statistics

3. Numerical data is used to express quantitative values, which imposes an order.
    A) True
    B) False

Ans: A
Complexity: Easy
Ahead: Data
Subject: Chapter 1
Chapter: Introduction to Statistics

4. Categorical data consists of ratio and interval data.
    A) True

B) False
Ans: B
Complexity: Easy
Ahead: Data
Subject: Chapter 1
Chapter: Introduction to Statistics

5. Interval and ratio data can be further classified as either discrete or continuous.
   A) True
   B) False
Ans: A
Complexity: Easy
Ahead: Data
Subject: Chapter 1
Chapter: Introduction to Statistics

6. Which of the following is not a variable?
   A) Sex
   B) Hot
   C) Severity rating
   D) Number of children
Ans: B
Complexity: Moderate
Ahead: Data
Subject: Chapter 1
Chapter: Introduction to Statistics

For questions 7–11, fill in the blank.

7. _____ is a tabular method for describing the frequency of occurrences over the levels of a variable.
   A) Variable
   B) Data
   C) Distribution
   D) Statistics
Ans: C
Complexity: Moderate
Ahead: Data
Subject: Chapter 1
Chapter: Introduction to Statistics

8. _____ is the science of data.
   A) Variable
   B) Data

C) Distribution
D) Statistics

Ans: D
Complexity: Moderate
Ahead: What Is Biostatistics?
Subject: Chapter 1
Chapter: Introduction to Statistics

9. _____ involves collecting, classifying, organizing, analyzing, and interpreting data.
A) Variable
B) Data
C) Distribution
D) Statistics

Ans: D
Complexity: Moderate
Ahead: What Is Biostatistics?
Subject: Chapter 1
Chapter: Introduction to Statistics

10. _____ are pieces of information.
A) Variable
B) Data
C) Distribution
D) Statistics

Ans: B
Complexity: Easy
Ahead: Data
Subject: Chapter 1
Chapter: Introduction to Statistics

11. _____ describes a characteristic that varies from one observation to the next and can be measured or categorized.
A) Variable
B) Data
C) Distribution
D) Statistics

Ans: A
Complexity: Easy
Ahead: Data
Subject: Chapter 1
Chapter: Introduction to Statistics

12. Descriptive biostatistics involves measures of all of the following, *except*:
A) Frequency
B) Central tendency
C) Position

D) All of these are correct.
Ans: D
Complexity: Moderate
Ahead: Methods in Biostatistics
Subject: Chapter 1
Chapter: Introduction to Statistics

13. Which of the following best defines a parameter?
    A) A measure from a sample
    B) A measure from a population
    C) A range of values wherein there is a level of confidence the true parameter value lies
    D) None of these answer choices are correct.

Ans: B
Complexity: Easy
Ahead: Methods in Biostatistics
Subject: Chapter 1
Chapter: Introduction to Statistics

14. Unordered categories or classes represent the following type of data:
    A) Nominal
    B) Ordinal
    C) Discrete
    D) Continuous

Ans: A
Complexity: Moderate
Ahead: Data
Subject: Chapter 1
Chapter: Introduction to Statistics

15. Which of the following types of data involves measurable quantities not restricted to taking on integer values?
    A) Nominal
    B) Ordinal
    C) Discrete
    D) Continuous

Ans: D
Complexity: Easy
Ahead: Data
Subject: Chapter 1
Chapter: Introduction to Statistics

16. Ranked spectrum of categorical observations is the following type of data:
    A) Nominal
    B) Ordinal
    C) Discrete
    D) Continuous

Ans: B
Complexity: Moderate
Ahead: Data
Subject: Chapter 1
Chapter: Introduction to Statistics

For questions 17–19, refer to the following table representing a sample of women and their frequency distribution of children.

Number of Children	Frequency	Cumulative Frequency	Relative Frequency	Relative Cumulative Frequency
0	5			
1	12			
2	17			
3	14			
4	4			
5	4			

17. Complete the columns in the table for a selected group of women according to the number of children they have had, and indicate the proportion of women in the group with up to no more than three children.
    A) 0.61
    B) 48
    C) 0.86
    D) 14

Ans: C
Complexity: Difficult
Ahead: Methods in Biostatistics
Subject: Chapter 1
Chapter: Introduction to Statistics

18. What is the mean number of children?
    A) 2.5
    B) 2.2
    C) 2.0
    D) 1.9

Ans: B
Complexity: Easy
Ahead: Method in Biostatistics
Subject: Chapter 1
Chapter: Introduction to Statistics

19. What is the standard deviation for the sample of children?
    A) 1.3
    B) 1.74
    C) 1.70

D) 1.32

Ans: D
Complexity: Difficult
Ahead: Methods in Biostatistics
Subject: Chapter 1
Chapter: Introduction to Statistics

20. To obtain a confidence interval for the mean in SAS, use the procedure MEANS along with the following option:
    A) MEAN
    B) STD
    C) CV
    D) CLM

Ans: D
Complexity: Difficult
Ahead: Statistical Software
Subject: Chapter 1
Chapter: Introduction to Statistics

Chapter: Chapter 02 – Test Bank

Multiple Choice

1. A proportion with the added dimension of time is referred to as a:
    A) Ratio
    B) Proportion
    C) Rate
    D) Frequency

Ans: C
Complexity: Easy
Ahead: Empirical Frequency Distributions
Subject: Chapter 2
Chapter: Descriptive Summaries of Data

2. Two methods of age-adjustment are available: direct and indirect. When the age-group specific rates are unstable because of small numbers, or unavailable altogether in the populations being compared, which is preferred?
    A) Direct
    B) Indirect

Ans: B
Complexity: Moderate
Ahead: Empirical Frequency Distributions
Subject: Chapter 2
Chapter: Descriptive Summaries of Data

3. In a city of 4386 people, 126 attended a potluck dinner. Within 6–72 hours following the dinner, 78 experienced symptoms that included acute diarrhea, abdominal pain, fever, and vomiting. These symptoms and the incubation period were consistent with salmonella poisoning. What is the attack rate?
    A) 2.9 per 100
    B) 1.8 per 100
    C) 59.3 per 100
    D) 61.9 per 100

Ans: D
Complexity: Difficult
Ahead: Empirical Frequency Distributions
Subject: Chapter 2
Chapter: Descriptive Summaries of Data

4. Refer to question 3. If 65% of the people who attended the dinner were female and their rate of illness was 64.6 per 100, how many females became ill?
    A) 82
    B) 65

C) 53
D) Insufficient information to compute

Ans: C
Complexity: Difficult
Ahead: Empirical Frequency Distributions
Subject: Chapter 2
Chapter: Descriptive Summaries of Data

5. Suppose you are interested in calculating the rate of injury in a large company of assembly line workers in a month (4 weeks). There were 50 injuries in 1000 workers, of which 700 work 40 hours per week, 200 work 20 hours per week, and 100 work 50 hours per week. What is the person–time rate of injuries per 100,000 hours worked? (Hint: Include the person–time at risk for 4 weeks in the denominator of the rate calculation.)
   A) 135.2
   B) 50.0
   C) 59.3
   D) 33.8

Ans: D
Complexity: Difficult
Ahead: Empirical Frequency Distributions
Subject: Chapter 2
Chapter: Descriptive Summaries of Data

For questions 6–7, refer to the data in the following table:

	Ill	Consumed This Food
Punch	29	74
Rolls	18	55
Ham	26	70
Ice cream	30	32
Fruit	22	71

6. After a luncheon, a number of people got sick. In an attempt to identify the food leading to the illness, the following data was collected. Which food is the culprit?
   A) Punch
   B) Rolls
   C) Ham
   D) Ice cream
   E) Fruit

Ans: D
Complexity: Easy
Ahead: Empirical Frequency Distributions
Subject: Chapter 2
Chapter: Descriptive Summaries of Data

7. What is the risk ratio of illness for ice cream versus fruit, expressed as a percentage greater or less than the reference group?
    A) 303%
    B) 203%
    C) 77%
    D) 187%

Ans: B
Complexity: Moderate
Ahead: Empirical Frequency Distributions
Subject: Chapter 2
Chapter: Descriptive Summaries of Data

For questions 8–11, refer to the following table:

Ages (years)	Population	Deaths
Population A		
15–19	1000	30
20–24	4000	16
25–29	6000	121
Total	11000	167
Population B		
15–19	5000	120
20–24	2000	20
25–29	500	20
Total	7500	160

8. Calculate the crude mortality rate ratio of population A compared with population B.
    A) 0.712
    B) 1.405
    C) 1.25
    D) 0.504

Ans: A
Complexity: Moderate
Ahead: Empirical Frequency Distributions
Subject: Chapter 2
Chapter: Descriptive Summaries of Data

9. Age-adjust population A using population B as the standard.
    A) 20.17 per 1000
    B) 15.2 per 1000
    C) 22.4 per 1000
    D) 18.1 per 1000

Ans: C
Complexity: Moderate
Ahead: Empirical Frequency Distributions
Subject: Chapter 2
Chapter: Descriptive Summaries of Data

10. What is the crude rate difference for population B compared with population A?
    A) 6.2 per 1000
    B) 6.0 per 1000
    C) 19.8 per 1000
    D) –6.0 per 1000

Ans: A
Complexity: Moderate
Ahead: Empirical Frequency Distributions
Subject: Chapter 2
Chapter: Descriptive Summaries of Data

11. Which of the following statements is correct?
    A) The death rate is 28.8% lower in population A.
    B) In age group 15–19, the death rate is 25% greater in population A.
    C) In age group 25–29, the death rate is 50% lower in population A.
    D) If A had the same age distribution as B, the death rate would be 5% higher in population A.
    E) All of these are correct.

Ans: E
Complexity: Moderate
Ahead: Empirical Frequency Distributions
Subject: Chapter 2
Chapter: Descriptive Summaries of Data

For questions 12–13, refer to the following table:

Ages (years)	Population	# Deaths
Population A		
15–19	1000	30
20–24	4000	16
25–29	6000	121
Total	11000	167
Population B		
15–19	5000	
20–24	2000	
25–29	500	
Total	7500	160

12. Calculate the standardized mortality ratio for population B using population A as the standard.
    A) 0.68
    B) 0.95
    C) 0.96
    D) 0.71

Ans: B
Complexity: Moderate
Ahead: Empirical Frequency Distributions
Subject: Chapter 2
Chapter: Descriptive Summaries of Data

13. Interpret your answer in question 12.
    A) The number of deaths in population A is 4% higher than if they had the same age-group specific death rates as population B.
    B) The number of deaths in population B is 5% lower than if they had the same age-group specific death rates as population A.
    C) The death rate ratio is 29% lower in population A.
    D) All of these are correct.

Ans: B
Complexity: Moderate
Ahead: Empirical Frequency Distributions
Subject: Chapter 2
Chapter: Descriptive Summaries of Data

14. What is the geometric mean for the following data set: 10, 10, 10, 100, 100, 1000, 10000?
    A) 1604
    B) 1000
    C) 10
    D) 100

Ans: D
Complexity: Easy
Ahead: Measures of Central Tendency
Subject: Chapter 2
Chapter: Descriptive Summaries of Data

15. What type of graph/chart is(are) appropriate for nominal data?
    A) Bar chart
    B) Histogram
    C) Box plot
    D) Spot map/area map
    E) A bar chart and spot map/area map are both correct.

Ans: E
Complexity: Easy
Ahead: Describing Data with Statistics and Graphs
Subject: Chapter 2
Chapter: Descriptive Summaries of Data

16. What type of graph/chart is(are) appropriate for ordinal data?
    A) Bar chart
    B) Histogram
    C) Box plot
    D) Spot map/area map
    E) A bar chart and spot map/area map are both correct.

Ans: A
Complexity: Easy
Ahead: Describing Data with Statistics and Graphs
Subject: Chapter 2

Chapter: Descriptive Summaries of Data

17. What type of graph/chart is(are) appropriate for discrete data?
    A) Bar chart
    B) Histogram
    C) Box plot
    D) Spot map/area map
    E) A bar chart and spot map/area map are both correct.

Ans: A
Complexity: Easy
Ahead: Describing Data with Statistics and Graphs
Subject: Chapter 2
Chapter: Descriptive Summaries of Data

18. What type of graph/chart is(are) appropriate for continuous data?
    A) Bar chart
    B) Histogram
    C) Box plot
    D) Spot map/area map
    E) A histogram and box plot are both correct.

Answer: E
Complexity:
Ahead: Describing Data with Statistics and Graphs
Subject: Chapter 2
Chapter: Descriptive Summaries of Data

Short Answer

1. On May 24, 2021, the CDC data tracker reported 39.2% of the country's population had been fully vaccinated for COVID-19 (https://www.beckershospitalreview.com/public-health/states-ranked-by-percentage-of-population-vaccinated-march-15.html). The top five states are Maine, Vermont, Connecticut, Massachusetts, and Rhode Island (51.9%, 51.71%, 50.94%, 50.26%, and 49.67%, respectively). The bottom five states are Georgia, Louisiana, Arkansas, Alabama, and Mississippi (30.68%, 30.48%, 30.22%, 28.71%, and 26.48%, respectively). Calculate the five-number summary, as well as the mean and the coefficient of variation for the top five states and the bottom five states.

Ans:

Analysis Variable : Top						
Minimum	Lower Quartile	Median	Upper Quartile	Maximum	Mean	Coeff of Variation
49.67	50.26	50.94	51.71	51.90	50.90	1.86