9.2 Collecting and Organizing Data

Chapter 9: Statistics and Data Analysis

Name: _____ Date: _____ Class/Period: _____

Problem 9.17 Nine students report the values $1, 2, 2, 3, 3, 3, 4, 4, 5$. Build a frequency table and check that its frequencies total 9.

Problem 9.18 A survey table has category frequencies 4, 7, 5, and 9. How many people answered the survey, and what calculation verifies your answer?

Problem 9.19 A class contains 24 students. Three response frequencies are 6, 8, and 3. Find the missing frequency and explain why it cannot be negative.

Problem 9.20 A researcher must sort 80 responses into five categories. Explain why tally marks are safer than trying to keep the counts mentally.

Problem 9.21 A frequency table lists a possible value with frequency 0. Explain what this means and why the value may still appear in the table.

Problem 9.22 A table lists a frequency of -2. Diagnose the error using the meaning of frequency.

Problem 9.23 Shoe sizes 5 through 9 have frequencies 2, 4, 7, 5, and 2. How many students wear at least size 8? Show which frequencies you combine.

Problem 9.24 Using the same shoe-size table, what fraction of the students wear size 7? Explain what the numerator and denominator count.

Problem 9.25 Values 4, 5, and 6 have frequencies 2, 1, and 3. Reconstruct the ordered data list and verify that it contains six observations.

Problem 9.26 A frequency table totals 31, but the original list has 30 observations. Give two possible counting mistakes that could explain the mismatch.

Problem 9.27 Create a 12-value data set whose unique mode is 4. Explain how your frequencies guarantee that the mode is unique.

Problem 9.28 Two grouped tables have identical interval frequencies. Explain why the original exact values may still be different.

Problem 9.29 The values 1 through 6 have frequencies $2, 3, 5, 4, 3, 1$. Without writing the full list, determine how many observations are greater than 3.5 and explain your method.

Problem 9.30 Values 10, 20, 30, and 40 have frequencies 3, x, 5, and 2. There are 18 observations. Find x, identify the mode, and check the total.

Problem 9.31 Compare a frequency table of exact temperatures with one that groups temperatures by tens. What information does the grouped table make easier to see, and what does it hide?

Problem 9.32 Design a reasonable frequency table for 25 students answering "How do you travel to school?" Then write one question the table answers quickly.