

9.5 Median and Mode

Chapter 9: Statistics and Data Analysis

Name: _____

Date: _____

Class/Period: _____

Problem 9.65 Order 2, 7, 4, 8, 5, identify the middle position, and find the median.

Problem 9.68 A data set is 1, 1, 2, 2, 3, 4. Identify every mode and explain why calling only 1 the mode would be incomplete.

Problem 9.66 Six race times are 1, 3, 4, 8, 9, 12 minutes. Find the median and explain why it is not one of the recorded times.

Problem 9.69 The values 1, 2, 3, 4, 5 all occur once. Explain why the data set has no mode.

Problem 9.67 The shoe sizes are 5, 6, 6, 7, 8, 8, 8. Find the mode and explain what it tells a shoe store.

Problem 9.70 Create six whole numbers whose median is 6.5 and is not one of the data values. Show the two middle values.

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Problem 9.71 The ordered data are 4, 7, x , 13, 15, and the median is 10. Find x and explain how ordering fixes its position.

Problem 9.74 Create seven values with two modes and median 10. Identify the modes and the middle value.

Problem 9.72 Six values have median 12. The two middle values are 9 and x . Find x and check by averaging the middle pair.

Problem 9.75 A favorite-color survey cannot be meaningfully averaged. Explain why the mode can still summarize it.

Problem 9.73 Create seven whole numbers with median 6 and no mode. Explain how both conditions are satisfied.

Problem 9.76 One extreme value changes from 20 to 200. Explain why the median may stay fixed even though the mean changes greatly.

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Problem 9.77 Five whole numbers have median 8, unique mode 8, and range 10. Create two different data sets and verify all three conditions.

Problem 9.79 A data set of nine different whole numbers has median 20. The smallest value increases by 100. Describe every possible way the new median could change.

Problem 9.78 A set of seven ordered values is 3, 5, a , 9, b , 14, 20. Its median is 9 and its only mode is 5. Find one possible pair (a, b) and justify it.

Problem 9.80 A categorical table has frequencies 7, 7, 4, and 2. Explain what the modes are without assigning numerical values to the categories.