

9.9 Shape and Skewness

Chapter 9: Statistics and Data Analysis

Name: _____

Date: _____

Class/Period: _____

Problem 9.129 A distribution has most values on the left and a long tail stretching right. Name the shape and identify the feature that determines the name.

Problem 9.132 Race completion times cannot be unusually below zero but may include a few very slow times. Explain why this often produces a right tail.

Problem 9.130 A distribution has a long left tail. Predict whether its mean is usually below or above its median and explain the pull of the tail.

Problem 9.133 Draw an approximately symmetric line plot with one mode and at least eleven observations.

Problem 9.131 House prices include many moderate values and a few extremely high values. Explain why right skew is likely.

Problem 9.134 Draw a clearly right-skewed plot with ten observations, median 5, and at least one value above 10.

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Problem 9.135 Draw a clearly left-skewed plot and circle the tail that determines its name.

Problem 9.138 A high outlier moves farther right while all other values stay fixed. Predict the changes in mean, median, and strength of right skew.

Problem 9.136 Can an approximately symmetric distribution have two peaks? Draw or describe an example.

Problem 9.139 A graph is called "normal" only because it looks balanced. Explain why "approximately symmetric" is a safer description.

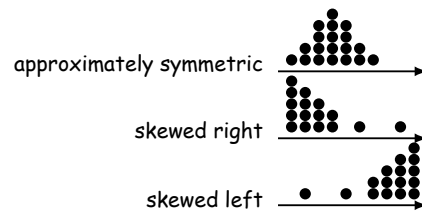
Problem 9.137 Explain why the usual mean-median relationship for skewed data is evidence, not an unbreakable theorem.

Problem 9.140 Explain why median is often a more useful center than mean for strongly skewed data.

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Problem 9.141 Study the three plots.



Classify each as approximately symmetric, skewed right, or skewed left. For each skewed plot, point toward the tail rather than the tallest stack.

Problem 9.142 For each plot above, predict the relationship between mean and median. State which prediction is most secure and which is only approximate.

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Problem 9.143 Create two data sets with the same median, one symmetric and one right-skewed. Explain how their means differ.

Problem 9.144 A distribution has mean 42 and median 35. What shape is suggested? Explain why those two numbers alone do not prove the shape.