9.16 Unit Review

Unit 9: Statistics and Data Analysis

Name: _____ Date: _____ Class/Period: _____

Problem 9.225 Classify "How many minutes did each student read last night?" as statistical or nonstatistical.

Problem 9.226 Classify favorite music style as categorical or numerical.

Problem 9.227 Classify height as discrete or continuous.

Problem 9.228 Choose a display for favorite after-school activity.

Problem 9.229 Choose a display for 18 students' shoe sizes.

Problem 9.230 Explain one difference between a bar graph and histogram.

Problem 9.231 A table has frequencies 3, 7, 8, 2. Find the total.

Problem 9.232 A data set has 25 observations and known frequencies 6, 9, and 4. Find the missing frequency.

Problem 9.233 Explain why bins must not overlap.

Problem 9.234 Find mean of $4, 7, 9, 10, 10$.

Problem 9.235 Find median of $8, 2, 5, 11, 7, 9$.

Problem 9.236 Find all modes of $1, 2, 2, 3, 4, 4, 5$.

Problem 9.237 Find range of $12, 18, 9, 25, 14$.

Problem 9.238 Find MAD of $2, 4, 4, 6$.

Problem 9.239 Five values have mean 18. Find their total.

Problem 9.240 Six values have mean 20. Five sum to 91. Find the sixth.

Problem 9.241 Choose mean or median for a strongly right-skewed income distribution.

Problem 9.242 Explain in kid-friendly language what MAD measures.

Problem 9.243 A long tail points left. Name the shape.

Problem 9.244 For right skew, compare mean and median typically.

Problem 9.245 Find five-number summary of $1, 3, 5, 7, 9, 11, 13$.

Problem 9.246 Find IQR for summary $(2, 8, 12, 19, 30)$.

Problem 9.247 What percent of observations lie approximately inside a box plot's box?

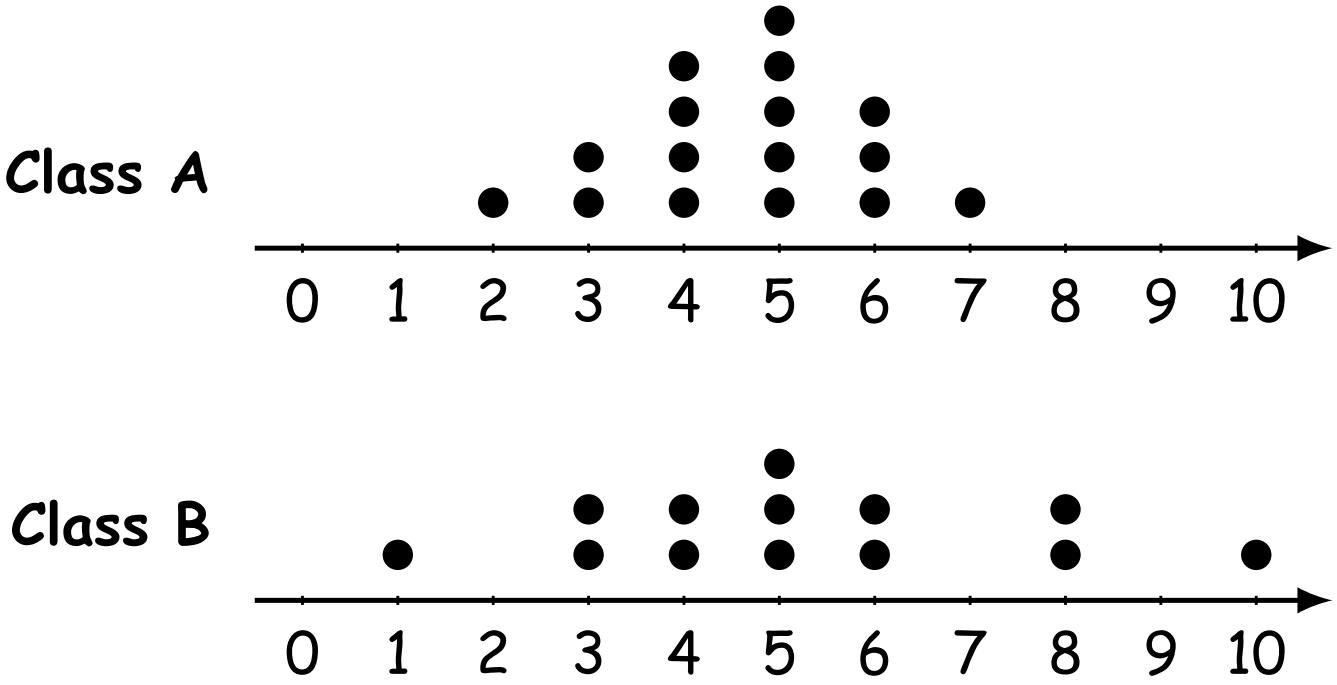
Problem 9.248 Which quarter is widest for summary $(0, 5, 8, 20, 24)$?

Problem 9.249 Explain one detail a box plot hides.

Problem 9.250 Explain one detail a line plot preserves.

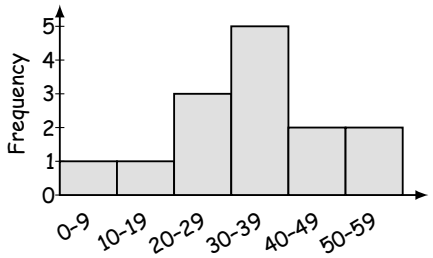
Problem 9.251 Construct a five-number summary suggesting right skew.

Problem 9.252 Study the line plots.



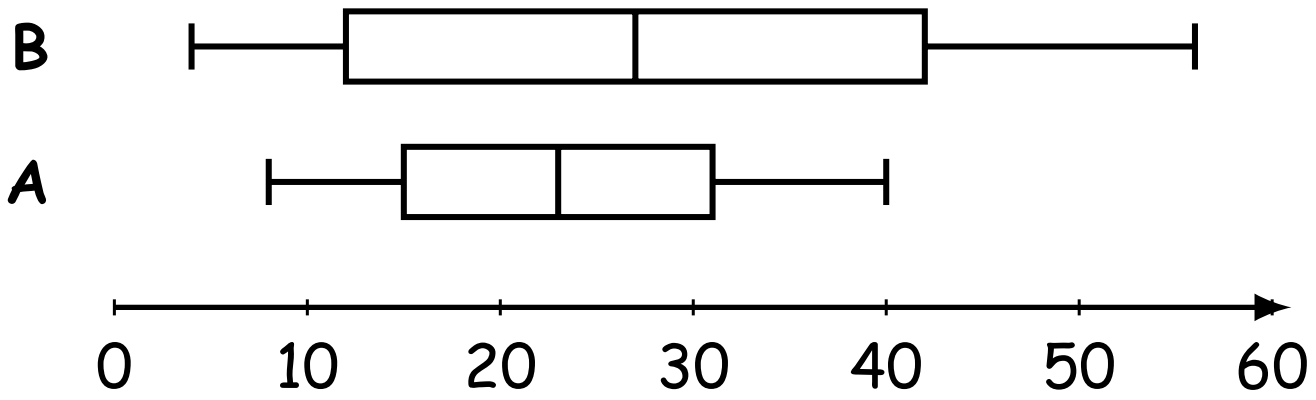
Compare the two distributions using center, spread, clusters, and any unusual values. State one conclusion that the diagrams support and one conclusion they do not support.

Problem 9.253 Study the histogram.



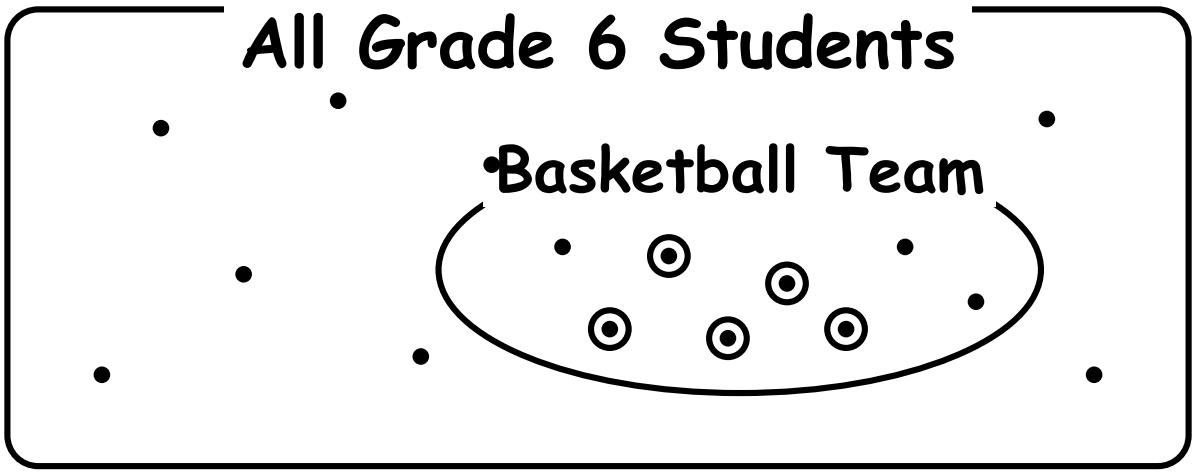
Find the sample size and modal interval, describe the shape, and explain why the exact mean cannot be recovered from the graph alone.

Problem 9.254 Study the box plots.



Compare median, IQR, and range. Then explain why the longer box does not contain more observations.

Problem 9.255 Study the sampling diagram.



Circled students are selected for the sample.

Explain the likely bias and redesign the sample so that the entire Grade 6 population is represented more fairly.

Problem 9.256 Class A has median 78 and IQR 6. Class B has median 82 and IQR 18. Compare typical performance and consistency.

Problem 9.257 A survey of school lunch satisfaction samples only students buying pizza. Explain the bias and propose a better sample.

Problem 9.258 A data set has mean 15. Adding one value 45 raises the mean to 18. Find the original number of observations.

Problem 9.259 Values 2, 5, and 8 have frequencies 4, 7, and 4. Find mean, median, mode, range, and MAD.

Problem 9.260 A course grade is 20 percent homework, 30 percent projects, and 50 percent tests. Scores are 95, 88, and 82. Find the weighted average and explain the formula in words.

Problem 9.261 Construct two data sets with equal mean and median but different MAD and IQR.