Show all your work. Indicate clearly the methods you use, because you will be graded on the correctness of your methods as well as on the accuracy of your results and explanation. Answer this question in the context of the S-M Ratio.   Name:_____ ID:_____

In a large multinational corporation, local branches each year record the sales performance of their salespeople (in millions of dollars) and the number of marketing personnel supporting them. From these records, the sales-to-marketing personnel ratio (S-M ratio) can be calculated for each branch.

The histograms below show the S-M ratio for all branches during the 2024 fiscal year. The histogram on the left displays the ratios for the 52 branches located in Europe, while the histogram on the right displays the ratios for the 48 branches located in North America. Based on the raw data, the S-M ratio shows that Europe has a range of 7 and an interquartile range (IQR) of 1, while. North America has a range of 10 and an interquartile range (IQR) of 3. The estimated mean S-M ratio for Europe is approximately 15.28, and the estimated mean S-M ratio for North America is approximately 16.17.

Distribution of Sales-to-Marketing Personnel Ratio (S-M Ratio)

a. Describe how you would use the histograms to estimate the median S-M ratio for each group (Europe and North America) of branches. Then use this procedure to estimate the median of the Europe group and the median of the North America group.

b. Write a few sentences comparing the distributions of S-M ratios for branches in the two groups (Europe and North America) during the 2024 fiscal year.