Interquartile Range (IQR)

The medians of the top half and the medians of the bottom half of the data for each of the three restaurants are as follows: Restaurant A—87.5 and 77; Restaurant B—83 and 76; Restaurant C—84 and 78. The difference between the medians of the two halves is called the *interquartile range,* or IQR.

a) What is the IQR for each of the three restaurants?

b) Which of the restaurants had the smallest IQR, and what does that tell you?

c) The median of the bottom half of the data is called the *lower quartile* (denoted by Q1), and the median of the top half of the data is called the *upper quartile* (denoted by Q3). About what fraction of the data would be between the lower and upper quartiles? Explain your thinking.

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a) What is the IQR for each of the three restaurants?

The IQR for Restaurant A is $87.5 - 77 = 10.5$*; Restaurant B is* $83 - 76 = 7$*; Restaurant C is* $84 - 78 = 6$.

b) Which of the restaurants had the smallest IQR, and what does that tell you?

Restaurant C had the smallest IQR. This indicates that the spread around the median number of fries is smaller than for either of the other two restaurants. About half of the data are within a range of 6 *fries and near the median, so the median is a pretty good description of what is typical.*

c) The median of the bottom half of the data is called the *lower quartile* (denoted by Q1), and the median of the top half of the data is called the *upper quartile* (denoted by Q3). About what fraction of the data would be between the lower and upper quartiles? Explain your thinking.

About $\frac{1}{2}$*, or* 50%*, of the counts would be between the quartiles because about* $\frac{1}{4}$ *of the counts are between the median and the lower quartile, and* $\frac{1}{4}$ *of the counts are between the median and the upper quartile.*