

Homework Solutions

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Example 5.4

- (a) There are 20 numbers, so the median is the average of the 10th and 11th numbers ($\frac{20+1}{2} = 10.5$). That is, the median is

$$\frac{43 + 44}{2} = 43.5.$$

- (b) Consider the 10 numbers that are in the lower half. Their median is the average of the 5th and 6th numbers ($\frac{10+1}{2} = 5.5$), so the first quartile is

$$Q_1 = \frac{41 + 41}{2} = 41.$$

- (c) Now consider the 10 numbers that are in the upper half. Their median is the average of the 15th and 16th numbers (or the 5th and 6th numbers in that group), so the third quartile is

$$Q_3 = \frac{46 + 47}{2} = 46.5.$$

- (d) The range is

$$\max - \min = 51 - 32 = 19.$$

- (e) The interquartile range is

$$\text{IQR} = Q_3 - Q_1 = 46.5 - 41 = 5.5.$$

You could use the TI-83 to get these answers (except for the range and IQR). Enter the data into list L_1 and use **1-Var-Stats**. You can read the median and the quartile from the display and use them to calculate the range and the IQR.