

9.4 Measures of Variation

ESSENTIAL QUESTION: How can you find the first quartile, third quartile, and interquartile range of a data set?

$220, 230, 230, 240, 240, 245, 250, 250, 250, 260, 260, 260, 260, 270$
 Range $\rightarrow 270 - 220 = 50$
 Median $\frac{240 + 250}{2} = 247.5$
 1st Quartile $\frac{230 + 240}{2} = 235$
 3rd Quartile $\frac{250 + 260}{2} = 255$
 Interquartile Range $\rightarrow 255 - 235 = 20$

Range \rightarrow The difference between the greatest value and the least value.

First Quartile \rightarrow The median of the lower half of the data.

Third Quartile \rightarrow The median of the upper half of the data.

The difference between the third quartile and the first quartile is called the interquartile range.

Find the median, first quartile, third quartile, and the interquartile range of the data.

~~84, 75, 90, 87, 99, 91, 85, 88, 76, 92, 94~~

$75, 76, 84, 85, 87, 88, 90, 91, 92, 94, 99$
 Range $= 99 - 75 = 24$
 Median $= 88$
 1st Quartile $= 84$
 3rd Quartile $= 92$
 Interquartile Range $= 92 - 84 = 8$

The ages of people in line for a roller coaster are 15, 17, 21, 32, 41, 30, 25, 52, 16, 39, 11, and 24. Find and interpret the range of their ages.

$11, 15, 16, 17, 21, 24, 25, 30, 32, 39, 41, 52$
 Range $= 41$