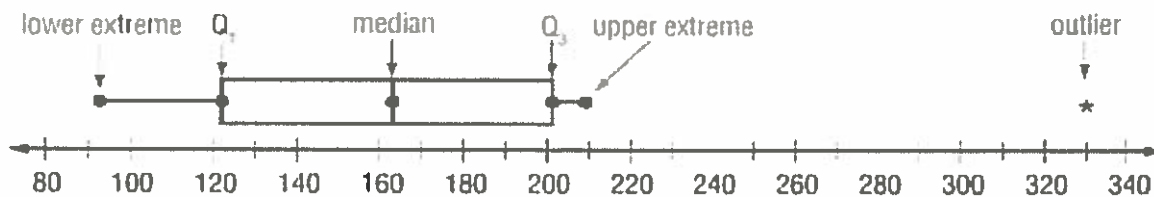**Vocabulary**

Box Plots (box-and-whisker plot) – uses a number line to show the distribution of a set of data by using the median, quartiles, and extreme values. A ___**box**___ is drawn around the quartile values, and the **whisker** ___ extend from each quartile to the extreme data points that are not outliers. The median is marked with a vertical line. The figure below is a box plot.

| lower extreme | Q_1 | median | Q_3 upper extreme | | outlier |

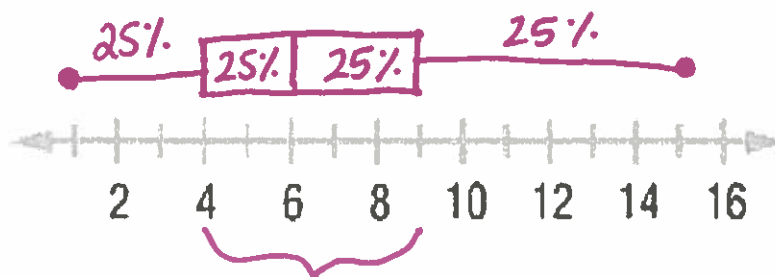(number line from 80 to 340 in increments of 20)

Box plots separate data into four parts. Even though the parts may differ in length, each contains 25% of the data. The box shows the middle 50% of the data.

Guided Practice

1.) Use the table.
   a.) Make a box plot of the data.

Depth of Recent Earthquakes (km)						
5	15	1	11	2	7	3
9	6	4	8	10	5	1

1, 2, 3, 4, 5, 5, 5 / 7, 7, 9, 9, 10, 11, 15

25% |25%| 25%| 25%

(number line from 2 to 16)

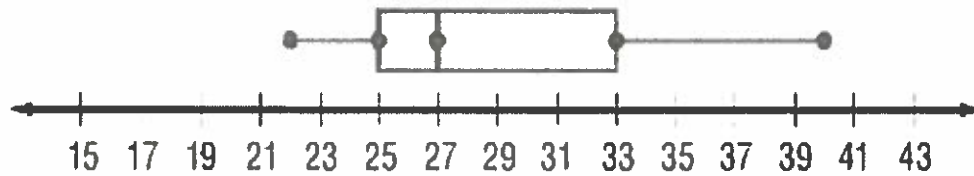b.) What **percent** of the earthquakes were between 4 and 9 kilometers deep?

50%

c.) Write a sentence explaining what the length of the box plot means.

The longer the box plot, the more spread out the data is.

2.) Find the median and the measures of variability for the box plot. Then, describe the data.

Average Gas Mileage for Various Sedans

15 17 19 21 23 25 27 29 31 33 35 37 39 41 43

Median: **27**

(Measures of Variation)
Range: **40 − 22 = 18**

First Quartile: **25**

Third Quartile: **33**

Interquartile Range: **33 − 25 = 8**

Outliers: **none**

~~Describe the Data:~~

Building on the Essential Question - How is the information you can learn from a box plot different from what you can learn from the same set of data shown in a line plot?

Box plot — median, quartiles, range, outliers

Line plot — mode, outliers

Rate Yourself
Check the box that applies.