In Lesson 15-1 we learned how to find the **median** of a distribution. We learned that this is the **middle score** and divides the distribution in half.

The median of the lower half of the data is called the **first quartile**.
The median of the upper half of the data is called the **third quartile**.

Q_1 = the first quartile = the median between the minimum and the median

Q_3 = the third quartile = the median between the median and the maximum

Maximum = the highest score
Minimum = the lowest score

Range = Maximum - Minimum

Ex 1) For the distribution of test scores shown in the stem and leaf plot below, find the (a) median, (b) first quartile, and (c) third quartile.

6	4, 6, 6
7	1, 3, 8, 8
8	0, 5, 7, 9
9	2, 2, 8
10	0, 0, 0

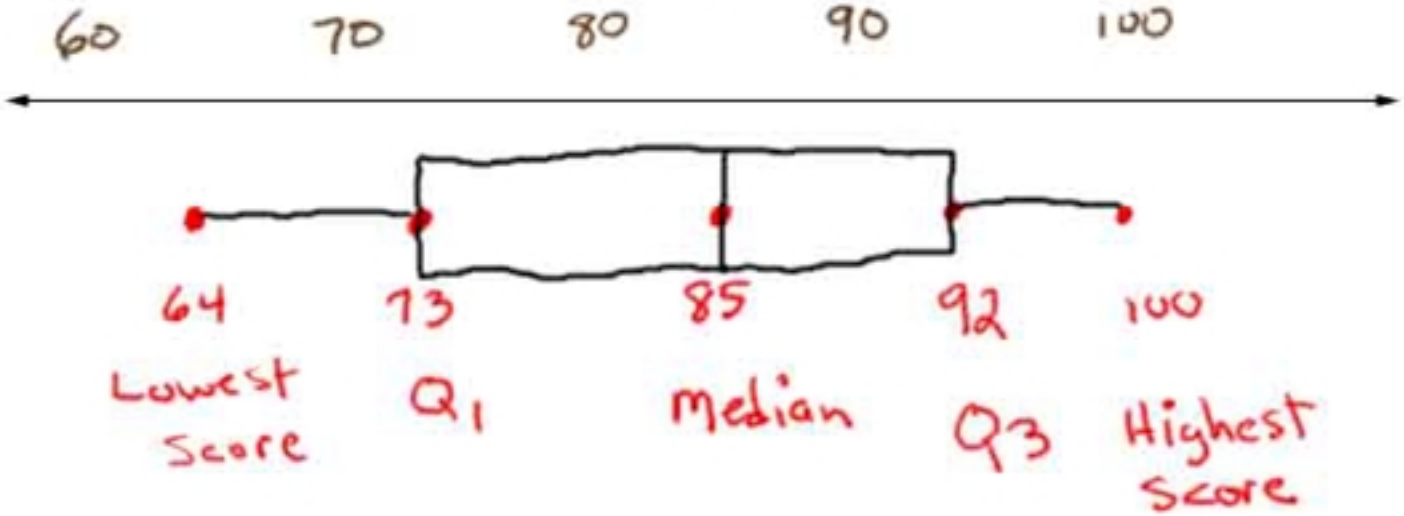
1a) median = 85

1b) 1st quartile = 73

1c) 3rd quartile = 92

A **box and whisker plot** can be used to show the median, the first and third quartiles, and the range of a distribution.

Ex 2) Draw a box and whisker plot for the distribution in Ex 1.



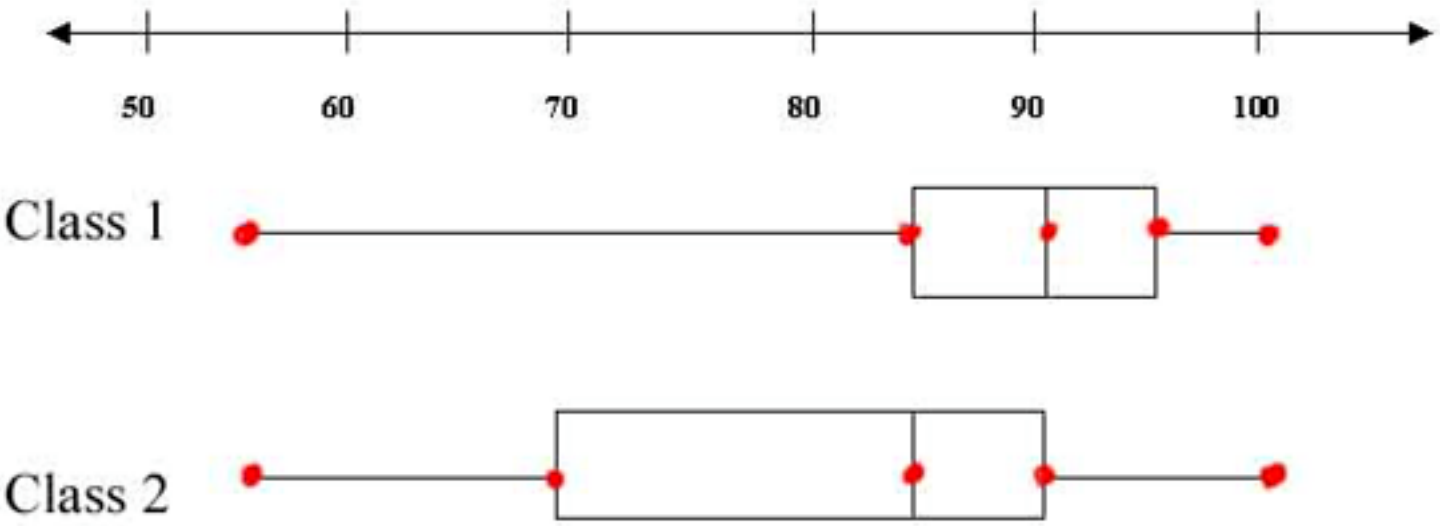
Ex 3) Two classes took the same Algebra Test. The results are shown in the box and whisker plots below.

a) Which class had the higher median?

b) Which class had the smaller range?

c) For which class are the scores in the middle half closer together?

d) Which class has the better set of scores?



3 a) Class 1 (the median is 90, which is greater than class 2).

3 b) Both classes have the same range: 100 - 55 = 45.

3 c) Class 1 (the box is shorter than class 2). By ignoring the "extreme scores" you get a better picture of the spread of the scores.

3 d) Class 1 (Three fourths of the scores for Class 1 are above or at the median of Class 2)