For questions, use the following data set: $\left\{3, 13, 7, 5, 21, 23, 23, 40, 23, 14, 12, 56, 23, 29\right\}$

1. Describe **in words** how to find the median for any data set.

2. Follow your directions in #1 to find the median of the data given above. *The median is also the Q2.*

3. To find the lower quartile (Q1 or$ Q\_{1}$ ), find the median of the data from the smallest to the largest number smaller than the median. Find Q1 of the given data.

4. To find the upper quartile (Q3 or $Q\_{3}$), find the median of the data from the largest to the smallest number larger than the median. Find Q3 of the given data.

5. The Inter-Quartile Range (IQR) is the range from Q1 to Q3, or $Q\_{3}-Q\_{1}.$ Find the IQR of the data by subtracting.

6. Find$ Q1-1.5\*IQR$. This is the smallest acceptable value for the left whisker.

7. Are there any data values that are less than the value found in #7? If so, what are they? These are outliers.

8. Find$ Q3+1.5\*IQR$. This is the largest acceptable value for the right whisker.

9. Are there any data values that are more than the value found in #9? If so, what are they? These are outliers.

10. The “**5-number summary**” is comprised of the minimum, the Q1, the median or Q2, the Q3, and the maximum values for a data set. Find the 5-number summary for the given data.

 MIN \_\_\_\_\_\_ Q1 \_\_\_\_\_\_ Q2 (MED) \_\_\_\_\_\_ Q3 \_\_\_\_\_\_ MAX \_\_\_\_\_\_

11. Construct an accurate Box-and-Whisker Plot using the information gained from answering #1-10.