

**STAT 291 - Statistics for the Mathematical Sciences I****Making a Boxplot**

1. Find the median and both quartiles.
2. Find the intraquartile range.
3. Find  $L_1 = 1.5 * \text{iqr}$  and  $L_2 = 3 * \text{iqr}$ .
4. Find the following:

$$\begin{array}{l} \text{Inner Fences: } f_1 = x_{.25} - L_1 \quad f_3 = x_{.75} + L_1 \\ \text{Outer Fences: } F_1 = x_{.25} - L_2 \quad F_3 = x_{.75} + L_2 \end{array}$$

5.  $a_1$  is the smallest value in the dataset greater than or equal to  $f_1$ , and  $a_3$  is the largest value less than or equal to  $f_3$ .
6. Draw a numberline covering the range of the data, and locate  $a_1$ ,  $x_{.25}$ ,  $\tilde{x}$ ,  $x_{.75}$ , and  $a_3$ .
7. Draw a box from  $x_{.25}$  to  $x_{.75}$  with a line in the center at the median.
8. Draw “whiskers” from each side to the adjacent value.
9. Points between the inner and outer fences are indicated by a closed circle. ●
10. Points past the outer fence are indicated by an open circle. ○