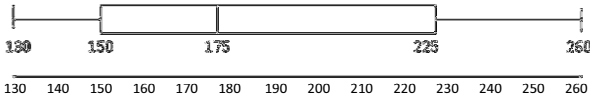


## 9.8 Box and Whisker Plots

Box and Whisker Plots are a visual way to look at Quartiles.

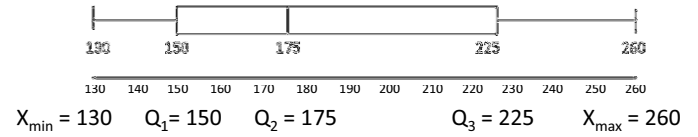


The Box and Whisker plot gives us information on the concentration and dispersion of the data.

There is exactly the same number of data entries in each section (25%) but they may be spread out (dispersed) in some sections more than others.

1

Ex 1: Weights of athletes on a men's rowing team.

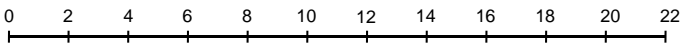


- The rectangle = Interquartile interval (where 50% of the data lies... 50% of the rowers are between 150 and 225 lbs)
- Vertical lines = Hinges =  $Q_1, Q_2, Q_3$
- Left whisker = distance between  $X_{\min}$  and  $Q_1$  (where the lower 25% of the data lies.. between 130 and 150 lbs)
- Right whisker = distance between  $Q_3$  and  $X_{\max}$  (where the upper 25% of the data lies.. between 225 and 260 lbs)

2

### Case 1 - Odd # of Items

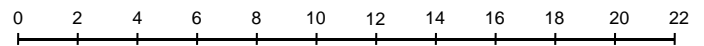
Ex 2: # of Visits to Mrs. Botros website/ day



3

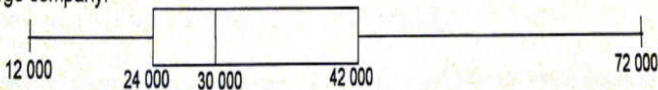
### Case 2 - Even # of items

Ex 3: Number of \_\_\_\_\_ / day



4

1. The following box-and-whisker plot represents the annual salary of employees in a large company.

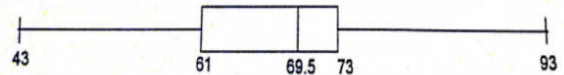


Which of the following statements is definitely TRUE?

- The mean salary is \$30,000.
- Half the employees earn between \$24,000 and \$42,000.
- The salaries are more densely concentrated between the second and third quartiles.
- There are more employees who earn over \$42,000 than employees who earn under \$24,000.

5

2. The marks on a history test for a class of 30 students are represented by the following box-and-whisker plot.



The following are the marks for 26 of the 30 students:

43 54 55 56 58 60 61 65 66 66 66 67 68  
70 71 71 71 71 71 71 74 77 77 79 86 88

Find the four missing marks. Explain why you chose each mark.

Practice P. 291 # 1-5