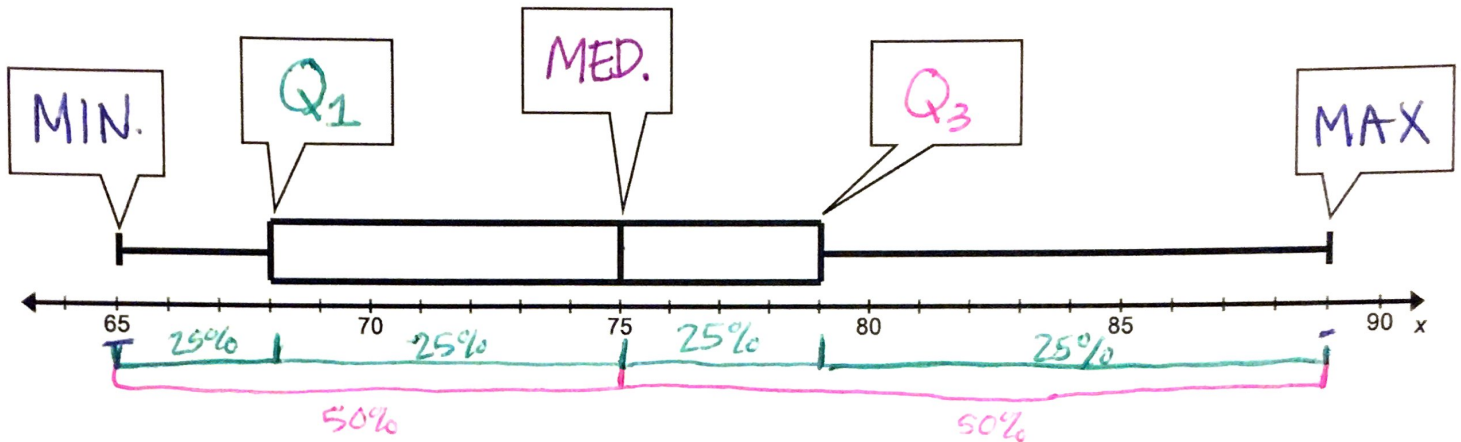


Box-&-Whisker Plots

Uses five important numbers from a set of data to show the general trends of the data.



- Minimum: LOWEST # in data set
- 1st Quartile (Lower Quartile): (Q_1) MIDDLE # in lower half
- Median: MIDDLE # in data set
- 3rd Quartile (Upper Quartile): (Q_3) MIDDLE # in upper half
- Maximum: HIGHEST # in data set

What percentage of the data does each piece of the box and whisker represent?

25% for each piece!

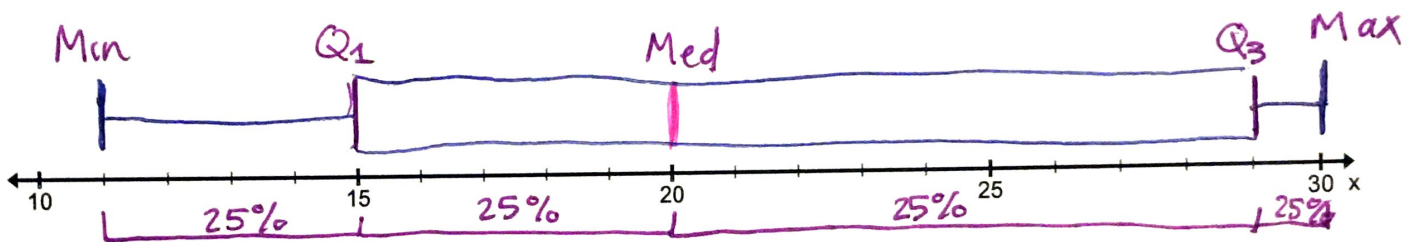
Vocabulary – Interquartile Range (IQR): $Q_3 - Q_1$

* It tells us how long our box is

Drawing a Box-and-Whisker Plot

A. Draw a box-and-whisker plot for the given data set.

16, 20, 30, 18, 23, 11, 15, 21, 30, 29, 12
~~11~~ ~~12~~ 15 ~~15~~ ~~16~~ 20 ~~21~~ ~~23~~ 29 ~~30~~ ~~30~~



Five Number Summary:

Minimum: 11
 1st Quartile (Q_1): 15
 Median: 20
 3rd Quartile (Q_3): 29
 Maximum: 30

$30 - 11 =$
 Range: 19

$29 - 15 =$
 Interquartile Range: 14

Steps to Make a Box and Whisker Plot:

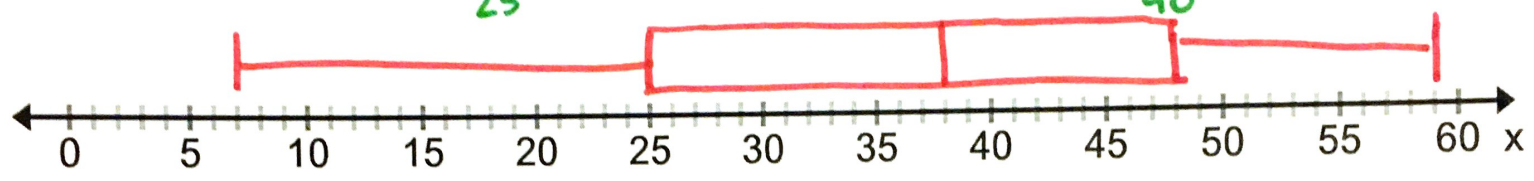
1. Put #'s in order, least to greatest
2. Write down min & max
3. Find the median
4. Find Q_1 and Q_3
5. Put ticks at the 5 # summary spots ABOVE the # line
6. Middle 3 ticks = BOX!

Draw whiskers from box to outside 2 ticks

Ex. 4: The following is a list of BYU's points scored in each of its games for the 2009 football season. Construct a box and whisker plot from the data.

$$\frac{44 + 52}{2} = 48$$

14, 54, 28, 42, 35, 59, 38, 7, 52, 24, 38, 26, 44
~~7~~ ~~14~~ ~~24~~ | ~~26~~ ~~28~~ ~~35~~ ~~38~~ ~~38~~ ~~42~~ ~~44~~ | ~~52~~ ~~54~~ ~~59~~



Five Number Summary:

Minimum: 7

1st Quartile (Q₁): 25

Median: 38

3rd Quartile (Q₃): 48

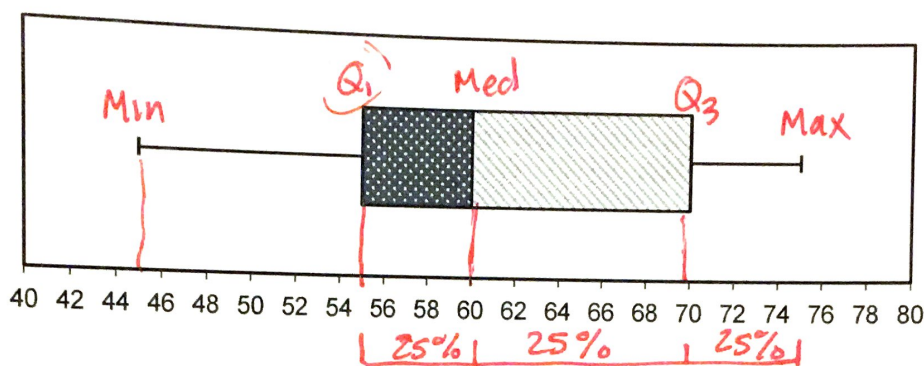
Maximum: 59

$59 - 7 =$
Range: 52

$48 - 25 =$
Interquartile Range: 23

Ex. 5: Use the box-and-whisker plot below to answer each question.

Age of volunteers at a homeless shelter



a) What is the age of the youngest volunteer? 45 yrs.
min

b) Half of the volunteers are under what age? 60 yrs.
lower 1/2

c) What percent of volunteers are over the age of 55? 75%

d) What is the 3rd quartile? 70 yrs.