6-2 Box and Whisker Plots and Outliers

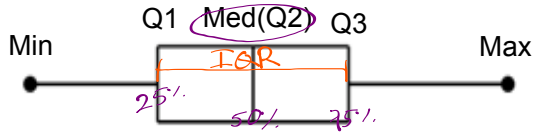
Objectives:

-I can create and analyze a box and whisker plot

- I can determine outliers of a data set

Feb 26-8:40 AM

Box and Whisker Plot



Min= lowest number

First Quartile (Q_1) = ½ way between Min and Med

Second Quartile (Q_2)= Median (exact middle)

Third Quartile (Q_3) = ½ between med and max

Max= highest #

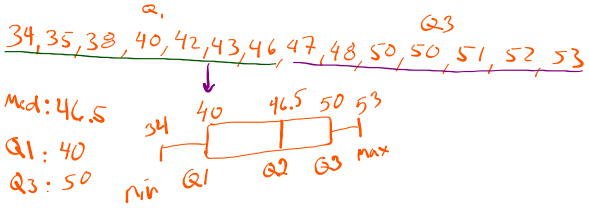
Range = Max - Min

Interquartile Range (IQR) = $Q_3 - Q_1$, Middle 50% of data, the box

Apr 13-10:36 AM

Create a box and whisker plot to represent the ages of a people from a tour group at a museum.

42, 46, 50, 52, 53, 50, 51, 34, 38, 48, 47, 43, 35, and 40



Dec 14-11:36 AM

Create a box plot to represent the following information of the length of bones in the human body.

Bone	Femur	Ulna	Humerus	8th rib	Radius	Tibia	7th rib	Fibula
Length (in inches)	50.5	27.5	36.5	23	26	49	24	40

8 4 5 1 3 7 2 6

Q2 32

Med: 32

Q1: 25

Q3: 44.5

23, 24, 26, 27.5, 36.5, 40, 49, 50.5

1) Which is the longest bone? Femur

2) What is the first quartile of the given data? 25

3) What is the median of the given data? 32

4) What is the length of the shortest bone? 23

5) What is the third quartile?

Dec 14-11:38 AM

The following are the weights of every member of the Chicago Bulls. Create a box and whisker plot to represent the data

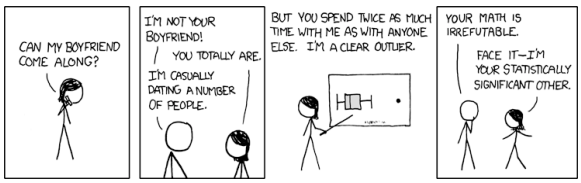
195, 255, 197, 210, 280, 198, 185, 185, 277, 230, 209, 185, 248, 214, 245, 226

How many of the players are below the median?

How many are above?

How many players are in the IQR?

Feb 26-9:38 AM



Box and Whisker plots allow us to get a good visual of outliers: a number that makes one of the whiskers noticeably longer than the box:

How to find an outlier:

1) - Find the IQR (inner quartile range) $Q3 - Q1 = ?$

2) - Multiple IQR by 1.5

- Subtract that number from Q_1 and add to Q_3

Any number below or above the values you just found are outliers

Apr 13-10:38 AM

Find the outliers for the following data sets

67, 71, 79, 65, 52, 71, 73, 94, 69

Q1 $25 - 9 = 16$

Q3 $31 + 9 = 40$

outlier

22, 24, 26, 26, 28, 31, 31, 37

22, 26, 31, 37, 31, 26, 28, 24

IQR = 6

$6 \cdot 1.5 = 9$

Med: 27

Q1: 25

Q3: 31

$Q3 - Q1$

$31 - 25 = 6$

4, 11.6, 50, 23, 20.1, 19, 29, 12.7, 8, 23, 57.5

Dec 14-11:47 AM