

Starter page 6 in your notes 22 MAR 2017

The effects of Extreme Scores on the Mean

Find the mean.
As of 2003, the top 10 earners in the Entertainment Industry

Name	Earnings in Millions
George Lucas	200
Oprah Winfrey	150
U2	69
Dave Mathews Band	50
Adam Sandler	47
Madonna	43
N Sync	42
Ben Affleck	40
Britney Spears	40
Jennifer Lopez	37

Handwritten notes:
 Upper half (green)
 Lower half (green)
 Median Q_2 (red)
 med. of upper half Q_3 (purple)
 med. of lower half Q_1 (purple)
 45 (red)
 A red line is drawn across the table from the 47 (Adam Sandler) to the 43 (Madonna).

The effects of Extreme Scores on the Mean

As of 2003, the top 10 earners in the Entertainment Industry

$$\bar{X} = \frac{718}{10} = 71.8$$

This is more than each of the bottom 8 Entertainers made in the year!
So this is not a good representation of the data.

The effects of Extreme Scores on the Mean

37, 40, 40, 42, 43 | 47, 50, 69, 150, 200

$$\text{median} = \frac{43 + 47}{2} = 45$$

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Does the median or the mean represent the values best?

Measures of Central Tendency

4. Quartiles (The five number summary

The median divides a set of data into two halves. The set of data below the median is called the **lower half** and the set of data above the median is called the **upper half**.

The **median of the lower half** is called the **first quartile** and is indicated by Q_1 .

The **median of the upper half** is called the **third quartile** and is indicated by Q_3 .

The **median** itself is considered to be the **second quartile**.

Measures of Central Tendency

4. Quartiles (The five number summary

So the five number summary is as follows:

min. value, Q_1 , median, Q_3 , max. value

37, 40, 40, 42, 43, | 47, 50, 69, 150, 200

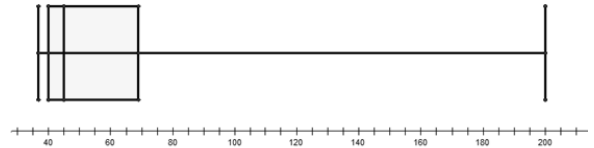
The 5 Number Summary

37, 40, 45, 69, 200

Measures of Central Tendency

4. Quartiles (The five number summary

The box and whiskers plot for this 5 Number Summary :37, 40, 45, 69, 200



Calculate the relative frequencies

x	f
10	1
11	2
12	5
13	7
14	9
15	6
16	3
17	1
18	1
Totals	35

Practice work.
State the 5 number summary, the range, the range of the lower half, the range of the upper half, and construct a box-and-whiskers plot

Kuta Software - Infinite Algebra 1

Name _____

Center and Spread of Data

Date _____ Period _____

Find the mode, median, mean, lower quartile, upper quartile, interquartile range, and population standard deviation for each data set.

1) Test Scores	2) Mens Heights (Inches)
37 42 48 51 52 53 54	62 64 69 70 70 71 72
54 55	73 74 75 77

Do not do population or standard deviation.

State the 5-Number Summary & *Box-and-whiskers plot*

3) Age Assumed Office

Senator	Age	Senator	Age	Senator	Age	Senator	Age	Senator	Age
Patrick Leahy	34	Carl Levin	44	Tammy Baldwin	50	John Barrasso	54	Mike Johanns	58
Mark Pryor	39	Rand Paul	47	Barbara Boxer	52	Kay Hagan	55	John Boozman	60
Brian Schatz	40	John Cornyn	50	Claire McCaskill	53	Jerry Moran	56	Jim Risch	65
John Thune	43								

