Math 20-2

KEY

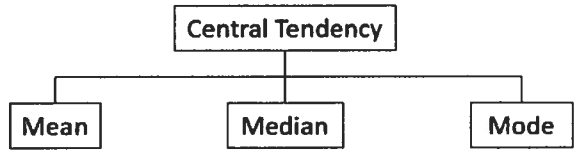
L36 – Mean, Median, Range

Part 1 – Statistics Cheat Sheet

Sample	Population
n - Sample size	N - Population size
$\bar{x}$ - Mean $\bar{x} = \frac{\sum_{i=1}^{n} x_i}{n} = \frac{x_1 + x_2 + \cdots + x_n}{n}$	μ - Mean $\mu = \frac{\sum_{i=1}^{N} x_i}{N} = \frac{x_1 + x_2 + \cdots + x_N}{N}$
s - Standard deviation $s = \sqrt{\frac{(x - \bar{x})^2}{n-1}}$ *(Note, TI uses sx for Standard Deviation of a sample of a larger population, using Bessel's Correction)*	σ - Standard deviation $\sigma = \sqrt{\frac{(x - \bar{x})^2}{N}}$ *(Note, TI uses σx for Standard Deviation for the data representing the entire population)*
s^2 - Variance	σ^2 - Variance
R - Range	

Part 2 – Measures of Central Tendency

When examining data, examining the ***Central Tendency*** of the data can be incredibly useful to understanding the data. Central Tendency can be measured by looking at the ***mean, median***, or ***mode***.



Mean – The average of a data set; Found by adding all numbers in the data set and then dividing by the number of values in the set.

Median - The middle value when a data set is ordered from least to greatest.

Mode - The number that occurs most often in a data set.

KEY

Math 20-2

Use the following information to answer Q1:

1	2	3	4	4	4	5	6	6

Q1: Complete the table for this data set:

Mean	*Median*	*Mode*
$\mu = \frac{1+2+3+4+4+4+5+6+6}{9}$ $\mu = 3.\overline{8}$	4	4

Use the following information to answer Q2:

8	8	8	9	10	12	15

Q2: Complete the table for this data set:

Mean	*Median*	*Mode*
$\mu = \frac{8+8+8+9+10+12+15}{7}$ $\mu = 10$	9	8

Use the following information to answer Q3:

4	5	5	5	6	8	8	9

Q3: Complete the table for this data set:

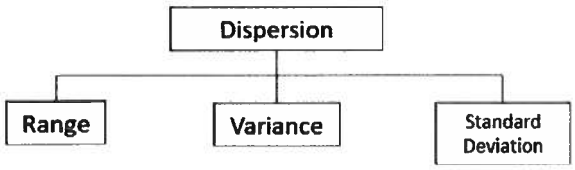
Mean	*Median*	*Mode*
$\mu = \frac{4+5+5+5+6+8+8+9}{8}$ $\mu = 6.25$	5.5	5

Math 20-2

KEY

Part 3 – Measures of Variation

When examining data, examining ***Dispersion*** of the data is also important to understanding the data. Dispersion can be measured by looking at the ***range, variation***, or ***standard deviation***.



Range – The difference between the highest and lowest numbers.

Variance – A measure of how far a set of numbers is spread out from their average value.

Standard Deviation – A measure of how far a set of numbers is spread out from their average value.

(We'll cover Variance and Standard Deviation in L38)

Use the following information to answer Q4:

Mr. Bayer is examining student marks on an 8-mark quiz. The results are as follows:

3 4 5 5 5 6 7 7 8 8

Q4: Complete the table for this data set:

Mean	*Median*	*Mode*	*Range*
$\mu = \frac{3+4+5+5+5+6+7+7+8+8}{10}$ $\mu = 5.8$	5.5	5	8-3 = 5

Part 4 – Mean, Median, Mode, and Range using a T.I. Calculator

https://www.youtube.com/watch?v=dL43joOJang

Notes:

STAT → 1. EDIT → Build List

STAT → CALC → 1. 1-Var Stats