

Section 3.5: Measuring Central Tendency of a Data Set

Part I: Central Tendency Measures

- Mean (AVERAGE) :  $\bar{x}$

THE MEAN IS USED TO DESCRIBE A DATA SET'S CENTRAL TENDENCY WHEN NO OUTLIER EXISTS IN THE DATA SET.

- Median (THE MIDDLE)

THE MEDIAN IS THE MIDDLE TERM OF A DATA SET WHEN THE DATA IS LISTED FROM LEAST TO GREATEST AND USED AS CENTRAL TENDENCY WHEN AN OUTLIER EXISTS.

- Mode (THE MOST)

THE MOST FREQUENT DATA POINT OF A DATA SET IS THE MODE.

DATA SETS CAN HAVE .....

- NO MODE
  - ONE MODE
  - TWO MODES
- } NO MORE THAN 2 MODES!

CATAGORICAL DATA USES THE MODE!

EXAMPLE: EYE COLOR OF CLASS.

DARK EYES: 15 ✓

BLUE EYES: 8

GREEN EYES: 2

HAZEL: 1

## Part II: Example of Central Tendency Measure

Find the mean, median, and mode of the data set of scores from a 6<sup>th</sup> grade spelling test. Which central tendency measure would most fairly represent the class performance on the test?

~~83, 33, 80, 82, 90, 90, 82, 86, 90, 40~~

$$\text{MEAN (AVERAGE): } \bar{X} = \frac{83 + 33 + 80 + \dots + 90 + 40}{10} = \frac{756}{10} = 75.6$$

MEDIAN (THE MIDDLE):

~~33, 40, 80, 82, 82, 83, 86, 90, 90, 90~~

$$\frac{82 + 83}{2} = 82.5 \checkmark$$

MODE (THE MOST): 90