

May  
11<sup>th</sup> - 22<sup>nd</sup>

# Notes For Populations and Samples

## 10.1 Your Turn and HW

- Population → The entire group of people that you want to know something about.
- A random sample of the population can be used to represent the whole population. In a random sample, every person in the population has the same chance of being part of the sample.
- Biased Sample → Not Fair, Does not accurately represent the entire population.
- Random Sample → A sample in which every person, object, or event has an equal chance of being selected.

Examples : Roberto wants to know the favorite sport of adults in his hometown. He surveys 50 adults at a baseball game. \* The population is adults in Roberto's hometown. The sample is the 50 adults. This is biased because he only surveyed people at a baseball game (which obviously those people like baseball) and other sports were not represented, this was not Random enough, not fair enough, therefore

Biased

pg. 1

pg. 1

May  
11<sup>th</sup> - 22<sup>nd</sup>

# Populations and Samples Notes Continued. 10.1 Your Turn and HW

Example: Paula wants to know the favorite type of music for students in her class. She puts the names of all students in a hat, draws 8 names, and surveys those students. \* The population is the students in Paula's class. The sample is the 8 names/students drawn. This is an example of a fair random sample. Each student had an equal chance of being selected.

## \* Notes For Mean, Median, Mode and Range \*

• Mean → This is the average of the numbers. Just add all the numbers up (be careful with the negatives) then divide by how many numbers there are.

Example: -5, 2, 4, -2, 7, 4, -3

1<sup>st</sup> add them up →  $-5 + 2 + 4 + (-2) + 7 + 4 + (-3) = 7$

Now Divide By How Many #s there are → There are 7 #s →  $7 \div 7 = 1$  Answer ↓

• Median → This is the middle number. Be Careful though, the numbers need to be in order from least to greatest. If one number is in the middle, that is your answer. If you end up with 2 numbers in the middle, Add those 2 numbers up and divide that answer by 2 to get the Median (Final Answer)

(Pg. 2)

May  
11th - 22nd

# Mean, Median, Mode, Range Notes Continued

(Pg. 3)

Example of Median:  $-3, -4, 1, -7, 9, 2, 5$

1st put #'s in order (least to greatest)  $\rightarrow -7, -4, -3, 1, 2, 5, 9$

Now Find the Middle  $\rightarrow$  The one is in the middle by itself, so 1 is the median.

Another Example of Median:  $2, 7, -1, 4, 3, -5$

1st put #'s in order (least to greatest)  $\rightarrow -5, -1, 2, 3, 4, 7$

Now Find Middle  $\rightarrow$  The 2 and 3 are in the middle so we add  $2 + 3 = 5$  then divide by 2.  $5 \div 2 = 2.5$   
This is the Median

- Mode  $\rightarrow$  This is the number that occurs most frequently. The easiest way is to put the numbers in order from least to greatest and look to see how many times each number occurs. If nothing repeats (occurs more than once) you say No Mode. If more than one number occurs more than once (and occur the same amount of times) you could have more than one mode.

Example:  $2, 1, 3, -4, 2, -5, -6 \rightarrow 2$  occurs the most this is the mode.

- Range  $\rightarrow$  This is the difference between the highest and lowest numbers.

Example:  $-4, -7, 3, 2, 5$  highest # 5 lowest # -7 Now subtract  $5 - (-7) = 12$