Statistics Summer Assignment
2021-2022 School Year

1. Compare and contrast the measures of central tendency (mean, median, mode and midrange). Give examples of when the mean would be a preferred measure, and when the median would be a preferred measure. Explain your answer.

https://www.expii.com/t/word-problems-when-to-use-mean-median-and-mode-4645

2. Find the mean, median, mode and midrange for the number of natural gas drilling sites in Pennsylvania counties with drilling operations listed below. Discuss the differences in these measures, and which best describes the center of the data. Explain your answer.

9	112	1	1	6	1008	109	6	14	58
20	136	85	3	58	185	6	415	2	43
26	2	2	2	473	53	76	19	41	462
693	1	2	560	4	191	98			

3. Use the website https://stattrek.com/survey-research/sampling-methods.aspx to research the following:

Explain what is meant by Probability Samples and Non-probability samples.

Determine how each of the sampling methods is executed and give an example for which each method would best be used:

Simple Random Sampling

Systematic Sampling

Stratified Sampling

Cluster Sampling

Convenience Sampling

Multi-stage Sampling

Additional for AP Statistics

4. Use the website https://stattrek.com/statistics/dictionary.aspx to complete the following vocabulary definitions.

Population

Sample

Census

Parameter

Statistic

Categorical Variable

Quantitative Variable

Discrete Variable

Continuous Variable

Independent Variable

Dependent Variable

Experiment

Experimental Design

Factor

Blinding

Control Group

Double Blinding

Treatment

Placebo

Bias

Confounding