MTH 245, Quiz #1, Spring 2022 Name KEY

Instructions: Show all work (that work can be in the form of a spreadsheet submitted along with the quiz or done by hand on paper; if you use your calculator, say what functions you used). Report answers to the standard number of decimal places, or to the number requested in the problem. Be sure to answer all parts of the questions, including requests for interpretation and explanations. Be as thorough as possible.

1. The Greek letters ***alpha***, ***mu*** **and** ***sigma*** (lower case) will be used throughout this course. Draw them below.

α, μ, σ

2. Classify each of the following variables as a) qualitative or quantitative; b) it's level of measurement: nominal, ordinal, interval, ratio; c) if the variable is quantitative, is it discrete or continuous.
   i. Number of credit cards you own

      a. quantitative
      b. ratio
      c. discrete

   ii. Highest degree earned

      a. qualitative
      b. ordinal
      c. N/A

   iii. Letter grades

      a. qualitative
      b. ordinal
      c. N/A

   iv. GPA

      a. quantitative
      b. interval
      c. continuous

3. Describe the difference between cluster sampling and stratified sampling.

in cluster sampling, divide the population into many small groups (clusters). Then randomly select clusters. Survey everyone in selected clusters.

in stratified sampling, divide population into a few groups (strata), and randomly select from all groups.

4. Describe an example of a study that would need institutional review board approval. Why is it necessary in this case?

answers will vary, but any study that involves people generally needs IRB approval.