MTH 324, Quiz #1, Fall 2022 Name KEY

Instructions: Answer each question as thoroughly as possible. Round answers to 4 decimal places as needed. Exact answers are best when possible. Be sure to answer all parts of each question.

1. Explain the difference between descriptive statistics and inferential statistics.

descriptive statistics describe the available data/sample as it is
inferential statistics tries to use information from a sample to say
something about data that has not been collected

2. Describe the procedures for creating a systematic sample. Given an example of a situation in which it would be used.

when every kth element of the sample is selected after randomly
choosing the first one. Sampling from lines is commonly done
this way

3. For each of the following variables, identify whether the variable is i) categorical or numerical, ii) it's level of measurement (nominal, ordinal, interval or ratio), and if it is numerical iii) whether it is discrete or continuous (write NA if it does not apply).
   a. Social security number

   categorical because it is a stand-in for a person (averages are meaningless)
   nominal, NA
   b. State of birth

   categorical, nominal, NA

   c. Level of agreement on a statement in a survey (agree, strongly agree, etc.)

   ordinal, categorical, NA

   d. GPA

   numerical/quantitative, interval, continuous

   e. Lifespan of a lightbulb in hours

   numerical/quantitative, ratio, continuous

4. What is the purpose of an institutional review board (IRB)?

to make sure that research on human subjects is conducted ethically