

Math 153 - Quiz 1

August 25, 2016

Name key

Score _____

Show all work to receive full credit. Supply explanations when necessary. YOU MUST WORK INDIVIDUALLY.

1. (2 points) A researcher is interested in determining how U.S. senators feel about a certain issue. The researcher interviews 15 senators. Identify the population and the sample.

Population -- SET OF ALL 50 U.S. SENATORS

Sample --- SET OF 15 SELECTED SENATORS

2. (2 points) The average age of those killed in the World Trade Center attacks is 40 years. Is this number a parameter or a statistic? Briefly explain your reasoning.

IT'S A PARAMETER BECAUSE IT IS THE
AVERAGE OF ALL THOSE IN THE POPULATION.

3. (2 points) Determine the level of measurement. Choose from nominal, ordinal, interval, or ratio.

(a) Distances that students commute to school

RATIO

(b) Places of athletes finishing a marathon

ORDINAL

4. (1 point) If you give 100% to Math 153, how much will you have to give to your other classes?

You'll HAVE 0% (NOTHING) TO
GIVE TO EVERYTHING ELSE.

5. (1 point) A ten-student committee is formed by selecting 6 full-time students and 4 part-time students at random. Is this a simple random sample? Explain.

No, NOT EVERY SAMPLE OF SIZE 10 IS
EQUALLY LIKELY. FOR EXAMPLE, A SAMPLE
OF 10 FULL-TIME STUDENTS IS IMPOSSIBLE.

6. (2 points) Ten students are to be selected from a group of 100 students.

- (a) Explain how you could do so with systematic sampling.

LIST THE STUDENTS IN ALPHABETICAL
ORDER, THEN CHOOSE EVERY 10TH STUDENT
ON THE LIST.

- (b) Explain how you could do so with stratified sampling.

SEPARATE THE STUDENTS INTO
5 GROUPS BASED ON AGES,
THEN SELECT 2 STUDENTS AT
RANDOM FROM EACH AGE GROUP.