

Math 153 - Quiz 1

August 27, 2015

Name key

Score _____

Show all work to receive full credit. Supply explanations when necessary.

1. (1 point) The average salary of all employees at Initek is \$43,564.36. Is this number a statistic or a parameter? Explain.

IT IS A PARAMETER BECAUSE IT
DESCRIBES A CHARACTERISTIC OF
THE POPULATION OF EMPLOYEES.

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

(a) School letter grades

ORDINAL

(b) Breeds of dogs in the Westminster Kennel Club dog show

NOMINAL

(c) Years in which Halley's comet can be seen in the sky

INTERVAL

(d) Volume of soda in a can

RATIO

3. (1 point) A study showed that there is a strong correlation between the consumption of certain fish by pregnant women and the incidence of birth defects. Does this study suggest that eating fish causes birth defects? Explain.

No, CORRELATION DOES NOT IMPLY CAUSATION.

4. (1 point) In an attempt to understand students' attitudes toward gun control, you set up a table in the atrium and use posters to ask students to complete a survey. What are some problems with this type of survey?

IT IS A VOLUNTARY RESPONSE SURVEY-- YOU SHOULD EXPECT BIAS BECAUSE THOSE WITH STRONG OPINIONS TEND TO REPLY TO THESE SURVEYS.

5. (5 points) What type of sampling is described in each situation. Choose from random, systematic, convenience, stratified, or cluster.

- (a) Every 3rd student from the class roster is selected.

SYSTEMATIC

- (b) Ten PSC classes are picked at random, and every student in each of those classes completes a survey.

CLUSTER

- (c) Each resident of the Laketown community puts his/her name in a box. Ten names are selected while the box is being shaken and stirred.

RANDOM

- (d) Students are separated into groups according to their majors. Five students are selected at random from each group.

STRATIFIED

- (e) You need to survey 3 classmates so you select the 3 students closest to you.

CONVENIENCE