Math 153 - Quiz 1

January 31, 2013

Name key

Score _____

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

1. (5 points) Biologists are trying to determine the average length of an adult brook trout in the Brule River. 937 brook trout are caught and measured. Their average length is determined to be 10.8 in.

   (a) Are the lengths of brook trout discrete or continuous?

   CONTINUOUS

   (b) Identify the level of measurement (nominal, ordinal, interval, ratio) for the lengths of the trout.

   RATIO

   (c) Is the average length reported above a parameter or a statistic?

   STATISTIC

   (d) Are the numbers of brook trout in the river discrete or continuous?

   DISCRETE

   (e) One biologist reported that the average brook trout length was actually 10.83493356178643901 in. Why should you be skeptical of the biologist's report?

   THE REPORTED LENGTH IS FAR TOO PRECISE TO BE BELIEVABLE. THAT DEGREE OF PRECISION IN THE MEASUREMENT OF TROUT IS PROBABLY UNATTAINABLE.

2. (1 point) The following survey was given to parents:

   Question 1 – Are you aware of the recent study that shows that only bad parents spank their children?

   Question 2 – Do you spank your children?

   What is wrong with this survey?

   THE ORDER OF THE QUESTIONS MAY LEAD PARTICIPANTS TO BE LESS TRUTHFUL IN ANSWERING #2.

3. (4 points) A frequency distribution is shown below.

Weights (kg)	Frequency
32.4–40.6	5
40.7–48.9	9
49.0–57.2	17
57.3–65.5	12
65.6–73.8	18
73.9–82.1	4

   (a) What are the lower class limits?

   32.4, 40.7, 49.0, 57.3, 65.6, 73.9

   (b) What is the class width?

   40.7 - 32.4 = 8.3

   (c) What are the class boundaries?

   32.35, 40.65, 48.95, 57.25, 65.55, 73.85, 82.15

   (d) If the frequency distribution was changed to a cumulative frequency distribution, what count would be associated with "Less than 57.25 kg"?

   5 + 9 + 17 = 31