CALCULATIONS (37 points):

Please use pencil, and put all of your answers on this paper. You must **do all** of the questions, and show all appropriate work. Please **draw a circle around each answer** unless otherwise instructed.

1. (29 points) In a small study, a sample of children used a number of digital libraries when completing a research paper assignment:

x	freq x
10	2
5	12
2	4
1	7

   (a) In the space above, generate the full frequency distribution of the sample using class examples as models. **Do not circle** the frequency distribution. (4 points)

   (b) What is the unit of analysis? (2 points)

   (c) What is the variable of interest? (2 points)

   (d) What is the mean of the distribution? (2 points)

   (e) What is the standard deviation of the distribution? (3 points)

   (f) Generate a 95% confidence interval on μ. **Do not circle** the CI on μ. (8 points)

(g) Determine Q_1, Q_2, and Q_3. (4 points)

(h) Generate the frequency polygon for this distribution. Do not circle the frequency polygon. (4 points)

2. (8 points) ND (12, 1.3)

(a) What is the percentile rank of an observation of 14 in this dataset? (4 points)

(b) How many standard deviations from the mean of this distribution are the observations 9 and 17? (4 points)

CONCEPTS (23 points): please use pen, and put all of your answers on this paper. Use only the space provided.

I. (4 points) Please define **four (4)** of the following terms (1 point each).

Anonymity

Descriptive statistics

μ

Content analysis

Focus groups

Effect size

Generalizability

II. (3 points) Please identify each of the statements below as true (T) or False (F). (1 point each)

Inferential statistics can help us estimate population parameters from sample statistics.   _____

Samples' representativeness implicates our ability to generalize.   _____

Oral history is an unobtrusive data collection method.   _____

III. (6 points)   Discuss the relationship(s) between the terms in **three (3)** of the following pairs (2 points each):

a. significance level and hypothesis testing

b. external validity and transferability

c. sampling distribution of the mean and the normal curve

d. s and σ

e. questionnaires and surveys

PLEASE DO NOT WRITE BELOW THIS LINE

IV. (10 points)   Respond to **two (2)** of the following questions or statements in the space
                  provided. (5 points each)

a.   Please discuss concepts of data quality in **quantitative research**.

b.   Why do empirical research in a professional discipline such as ours?

PLEASE DO NOT WRITE BELOW THIS LINE

c. Given the imperatives (1) to ensure research participants' informed consent and (2) not to deceive informants in social research, under what conditions might unobtrusive research be done in information agencies?

d. Why must data be categorical in order to use contingency tables?

e. What role does bias play in the error model of research?