

STOR 155, Section 1, Midterm II
Tuesday, April 7, 2009

Name: _____

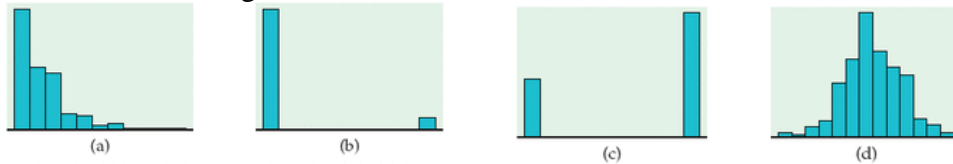
Pledge: I have neither given nor received aid on this examination.

Signature: _____

Instructions: Do not do any actual numerical calculations. Answers in a form that you would type into an Excel field, such as “=28*SQRT(82)^2”, with a *working* answer, are expected.

1. Measurements of C-Reactive Protein in a set of children are record in cells A1-A25 of an Excel spreadsheet. The 5 number summary for this data set is: 0, 0.1, 0.6, 3.1, 27.
 - a. Write the Excel command that was used to compute the 3rd Quartile.
 - b. Does this distribution appear to be skewed, and if so, which way?
 - c. What is the median of this distribution?
 - d. Is the mean expected to be smaller or larger than the median?
 - e. Why is the Inter Quartile Range equal to 3?
 - f. How do you know there is at least one outlier in this data set?
 - g. Suppose the normal Q-Q plot of the log₁₀ of the data roughly follows a straight line. What fraction of the log₁₀ transformed data are within 3 standard deviations of their mean (i.e. mean of the log₁₀ transformed data)?

3. A survey of a large college class asked four questions and the numerical responses were summarized in these histograms:



- i. Which histogram most likely summarizes results to the question: Are you male or female? (male = 0, female = 1)
- ii. Which histogram most likely summarizes results to the question: Are you right or left handed? (right = 0, left = 1)
- iii. Which histogram most likely summarizes results to the question: How many minutes do you study on a typical weeknight?
- iv. Which histogram most likely summarizes results to the question: What is your height in inches?
- v. Which histogram most closely follows a normal distribution?
- vi. Which histogram is most likely to have an outlier, using the rule given in class?
- vii. Which histogram best fits the description “left skewed”?
- viii. Which histogram best fits the description “right skewed”?
- ix. Which histogram is most likely to give a linear Normal Quantile plot?
- x. Which histogram is most likely to have an Inter Quartile Range of 0?

