MATH 3063 APPLIED STATISTICS Project 1 Name:
PROF. PAUL BAILEY February 5, 2009

Due Thursday, February 12, 2009.

Problem 1. (Statistical Computations by Hand)
A variable on a population produced this set of numbers:

3 4 7 5 5 3 8 8 5 2

Perform the following computations by hand, and show all work.

(a) Find the minimum, maximum, range, mode, median, and mean.

(b) Find the variance, standard deviation, and coefficient of variation.

(c) Find Q_1, Q_2, and Q_3.

(d) Draw (by hand) a histogram with five bins.

Problem 2. (Data Analysis via Excel)
In the NFL, how many points does it take to win a typical game?

Download "NFL Scores" from the web site for this class. You may directly access this at this URL:

`http://www.saumag.edu/pbailey/z09s/nflscore.xls`

Save the spreadsheet to your hard drive. Open it and create a new column labeled `Wscore` (column `F`) which contains the winning score (in cell F2 use the Excel command `=MAXIMUM(C2,E2)`, and then drag it down to the bottom of the data). Create a new column labeled `Bin` (column `G`) which contains bins for every multiple of 3 from 3 to 54 (in cell G2 enter `3`, in cell G3 enter `=G2+3`, and drag it down to until you get to 54).

(a) Using `Tools/Data Analysis/Histogram`, create a bar-graph histogram from columns `F` and `G`. Is the data mound shaped, skewed left, or skewed right? Discuss why this may be.

(b) Using `Tools/Data Analysis/Descriptive Statistics`, find the minimum, maximum, mean, median, mode, standard deviation, and coefficient of variation of the winning score.

(c) Find the 75 percent Chebychev interval about the mean.

(d) Find Q1, Q2, and Q3.

(e) Find the probability of winning, the probability of scoring at least twenty points, and the conditional probability of a team winning given that the team scored at least twenty points.