

Appendix C
Sample Problem Sets

Problem Set # 1

Name _____

- (2.0 pts) 1. Give *an example* of each of the following types of variables: (Use examples other than those in the textbook and practice/problem sheets.)

example of a nominal category variable:

example of an ordinal category variable:

example of a discrete quantity variable:

example of a continuous quantity variable:

- (1.5 pts) 2. List three reasons why a researcher may study a sample rather than a population.

- (12.5 pts) 3. A quality inspector is monitoring the weights of packages of oats. A sample of 24 packages yields the following results.

29.3	30.4	30.7	30.0	29.4	30.9	30.2	30.4
30.1	29.6	30.0	29.7	29.7	30.8	31.3	30.4
30.1	30.2	29.8	30.7	30.0	29.8	30.1	30.2

- a. Put the data into numerical order.

b. Make a dot-diagram for this data.

c. Find the mean, median and mode(s) for this raw data. Show your calculations or explain your method.

mean:

median:

mode(s):

d. Find the range. Show your calculations or explain your method.

e. Find the inter-quartile range. Show your calculations or explain your method.

f. Construct a frequency distribution. Explain how you selected the values for your class intervals.

g. Construct a histogram based on the frequency distribution.

h. Calculate the mean based on this grouped data. Show your calculations or explain your method. Compare the mean calculated in this way with the mean calculated from the raw data.

(4 pts.) 4. The following are data on the type of defects associated with mechanical parts returned to a manufacturer over a three month period.

TYPE OF DEFECT	NUMBER OF PARTS	% OF TOTAL
a. lubrication problem	60	
b. misaligned	35	
c. defective component	20	
d. missing component	7	
e. wrong dimensions	5	
f. moving part broken	4	
g. other	5	

Construct a pie chart to represent the data.

