

Name: _____

Problem Set 1.4

1.) The 5-number summary is usually listed as min, Q1, median, Q3, max. Each one of the 5 has at least one synonym. List one for each.

Min =

Q1 =

Median =

Q3 =

Max =

2.) Open the CODAP file **Mean Hospital Stay** data set.

a.) Analyze the data.

b.) Write a complete sentence describing what Q1 means within the context of this problem.

c.) What percentage of the states have a mean stay between Q1 and Q3?

d.) Which measure of center, mean or median, seems more appropriate with this data set and why?

e.) Can you make any geographic generalizations about the states that have comparatively long vs. short mean stays in hospitals?

3.) Give an example of a data set where a box plot is not appropriate.

4.) What shape of a box and whisker plot or dot plot will result in the median being appreciably different from the mean, even when there are no outliers?

5.) Open the CODAP file called **Airplanes**.

a.) Create a box and whisker plot of the attribute "costph": cost of operating in dollars per hour. Without doing any calculations, predict which will be bigger, the mean or the median, just by looking at the box and whisker plot. Write a sentence which explains your reasoning.

b.) Analyze the data for the attribute "costph": cost of operating in dollars per hour. Check to see if your conjecture in part (a) was correct.

6.) Open the CODAP file called **2010 Midsize Car Fuel Economy**.

a.) Create a box and whisker plot of fuel economy. Based on the box and whisker plot alone, are there any outliers? If so, which car(s)?

b.) Test for outliers using the $1.5 \times \text{IQR}$ and verify algebraically your results in part (a).