Problem 1 – Graphing Histograms

Before beginning the activity, the lists AVG.8xl, YARDS.8xl, LONG.8xl, TDS.8xl need to be transferred to your calculator via handheld-to-handheld transfer or transferred from the computer to the calculator via TI-Connect.

You should receive four lists titled **YARDS**, **AVG**, **LONG**, and **TDS**. This data gives statistics about 50 professional football receivers in the NFC East division from the 2007 season.

1. Graph the histogram for the receivers' total number of yards, found in the list **YARDS**.

   a. Describe the shape of the histogram.

   b. Estimate the mean: _____ and the median: _____.

   c. Does the mean or the median best describe the data set? Why?

   d. Based on the histogram, draw what you think the box plot would look like.

2. Graph the histogram for the receivers' average number of yards, found in the **AVG** list.

   a. Describe the shape of the histogram.

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   b. Estimate the mean: _____ and the median: _____.

   c. Does the mean or the median best describe the data set? Why?

d. Based on the histogram, draw what you think the box plot would look like.

3. Graph the histogram for the receivers' longest run of the season, found in the **LONG** list.

    a. Describe the shape of the histogram.

    b. Estimate the mean: _____ and the median: _____.

    c. Does the mean or the median best describe the data set? Why?

    d. Based on the histogram, draw what you think the box plot would look like.

4. Graph the histogram for the receivers' touchdowns, found in the list **TDS**.

    a. Describe the shape of the histogram.

    b. Estimate the mean: _____ and the median: _____.

    c. Does the mean or the median best describe the data set? Why?

    d. Based on the histogram, draw what you think the box plot would look like.

Problem 2 – Graphing Box Plots

5. Graph the box plot for the total number of yards.

    a. How does your box plot compare to the calculator's?

    b. Where is the median located on the box plot? Where do you think the mean will be?

    c. Calculate the mean and the median. How do your estimates compare?

6. Graph the box plot for the averages.

    a. How does your box plot compare to the calculator's?

    b. Where is the median located on the box plot? Where do you think the mean will be?

    c. Calculate the mean and the median. How do your estimates compare?

7. Graph the box plot for the longest run of the season.

    a. How does your box plot compare to the calculator's?

    b. Where is the median located on the box plot? Where do you think the mean will be?

    c. Calculate the mean and the median. How do your estimates compare?

8. Graph the box plot for the number of touchdowns.

   a. How does your box plot compare to the calculator's?

   b. Where is the median located on the box plot? Where do you think the mean will be?

   c. Calculate the mean and the median. How do your estimates compare?

Problem 3 – Conclusions

9. How does the shape of the histogram determine the shape of the box plot?

10. What is the shape of the histogram if the value of the mean is approximately the same as the value of the median?

11. What is the shape of the histogram if the value of the mean is greater than the value of the median? Less than?

12. What effect do outliers have on the shape of the histogram and box plot?

13. What effect do outliers have on the value of the mean? Median?