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| **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.  .  **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? |