

Problem 1 – What is Average?

In this activity, you'll investigate different sets of data to find measures of central tendency and compare sets of data.

1. Define mean. _____
2. What is the range of a set of numbers? _____
3. What is the median of a set of numbers? _____

4. Find the following statistics of the list **NHBR**, the salaries of 27 people in a neighborhood.

Mean: _____ Median: _____ Range: _____

From the home screen, press **2nd** **LIST** **↓** **ENTER** to select 1-Var Stat. Press **2nd** **LIST** and use the arrows to select the list name, **NHBR**.



5. What is Quartile 1? _____ Quartile 3? _____
6. What do these numbers represent? _____

7. What is the median income? What does this mean? _____

8. Do you think this is a typical neighborhood in the town? Why or why not? _____

Problem 2 – Investigating Outliers

9. Suppose the cashier making \$18,844 gets a contract for his dream contract with the Dallas Mavericks making \$1.1 million. What will happen to the statistics found above?

10. Create a box plot of the original list and sketch it at the right.

11. Change the list and find the new mean, median, and range of the list you modified. The sketch the new box-plot at the right as well.

Mean: _____ Median: _____ Range: _____
Quartile 1: _____ Quartile 3: _____



12. Describe how the graph changes from data set one to the modified data. What can you easily tell from the graph? _____

Neighborhood Salaries

Problem 3 – Investigate Sample Size

13. Now use list **TOWN** (the entire town's salaries) and find the mean, median and quartiles.

Mean: _____ Median: _____

Range: _____ Quartile 1: _____

Quartile 3: _____

14. How does the neighborhood compare to the whole city? _____

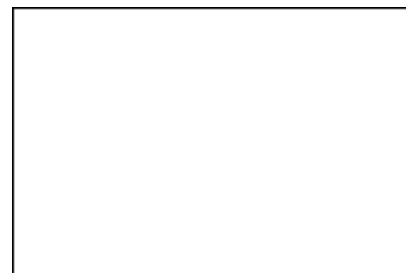
15. Did the neighborhood reflect what the town was like? Yes or no? Explain. _____

Problem 4 – Using Box-and-Whisker Plots

16. Create a box-and-whisker plot of the town's salary data.

Press $\boxed{2nd}$ $\boxed{Y=}$ and choose a Stat Plot to . Turn the Plot on and set the Type to box-and-whisker $\boxed{\overline{\square}}$. Select **TOWN** for the Xlist and set 1 for frequency.

Sketch the graph at the right.



17. How does the town graph compare to the neighborhood graph in Question 10?

18. If someone uses the original neighborhood data to describe the town to someone in another town, how is it off from the true data of the whole town? (overstate the salary, understate it, and so on)
