Name _____

Taneisha has the same average in math and language arts. She believes that academically she is equally strong in both subjects. Is she?
Use the test scores below to show her your results.

Math test scores 80, 75, 90, 95, 65, 70, 80, 90, 70, 95
Language Arts test scores: 95, 65, 88, 90, 67

Find the mean and median for both classes.
Mean ____ median _____ Math
Mean ____ median _____ Language Arts
Construct a box and whiskers plot for each class to convince Taneisha that she is stronger in one of the two classes.
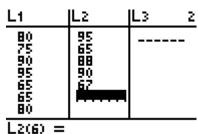
TI-73 directions **enter data into Lists**.
1. Press the [LIST] key.
2. Clear all entries from L1 and L2→ use the [▲] key to highlight L1, press [CLEAR], then press [ENTER]. Use the [▶] to navigate to L2. Repeat the previous steps to clear L2.
3. Enter the Math test scores into L1. Press [ENTER] after each score.
4. Use the [▶] to navigate to L2. Enter the Language Arts test scores into L2.
5. Press [2nd][MODE], to quit.

Find the mean
The calculator can find the minimum, maximum, mean, median, and mode for any list. Check your answers for the mean using the calculator.
1. Press [2nd][LIST]. Use the [▶]to navigate to MATH. Scroll to mean(
2. Press [ENTER], then press [2nd][LIST], choose L1, press [)]then press [ENTER].
3. Do your calculations and the calculator's match?
4. Repeat for L2.

Construct a **box plot**
Plot for the Math test scores:
1. Press 2nd Y=

```
STAT PLOTS
1:Plot1...On
   L₁   L₂
2:Plot2...Off
   L₁   L₃
3:Plot3...Off
   L₁   L₂
4↓PlotsOff
```

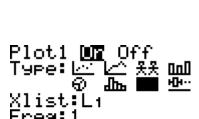2. Scroll to Plot1 and press ENTER
   Use the arrow key to:
   Turn Plot1 ON
   Type box and whiskers
   XList: L1
   Freq: 1
   Your screen should look like this→
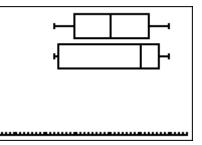
```
Plot1  On  Off
Type:
Xlist:L₁
Freq:1
```

3. Press GRAPH
4. Do you see the box plot of the math scores? If not, you may need to **change your window**. Press ZOOM and scroll to ZoomStat (#7). Press GRAPH. The math box plot will be on your screen.

5. Plot the Language Arts test scores using the same steps in Plot2 with the XList: L2.

6. Compare the two graphs. Use the TRACE and arrow keys to find minX, Q1, the median, Q3, and the maxX for each subject.

Explore more
How do the grades compare? Is Taneisha equally strong in both subjects? Explain using information from the graphs.

Today Taneisha received her latest test grade in each class: Math 75 and Language Arts 75.
Enter these scores into L1 and L2 and explore the changes.
Compare and contrast the new graphs. Write a letter to Taneisha explaining how each new test score affected her grade.

Extension

Taneisha decided to look at her science grades. Enter her grades into L3.

Science test scores 82, 88, 0, 89, 85

Find the mean _____ and median _____
Which of the two measures is a better predictor of Taneisha's grade on the next test? Explain.

The science teacher has announced that if a student passes next Friday's test, the lowest grade will be replaced with a 70. How will this affect the mean and median of Taneisha's test scores? Would you prefer that your grade be based on the mean or median? Explain.

Choose two of your own classes and plot the information. Compare and contrast the grades. What conclusions can you make?