Part 1 – Estimating Length

Take the piece of string home that is provided by your teacher. Use it to mark off this distance at home. Ask 5 people to estimate the length. Give each person a time limit. They are not allowed to walk or attempt to measure the distance.

1. Distance to measure off (given by teacher): _____
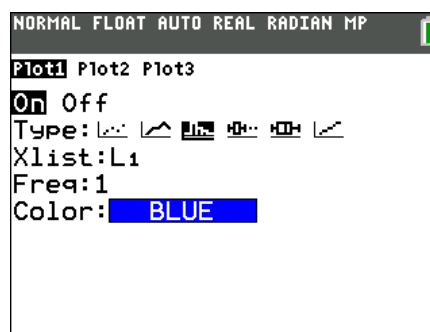
2. Estimate made by each person:

    _____

    _____

3. Record the whole class list.

4. Create a histogram of the whole class data set. Make sure it shows the minimum, maximum, and all data values in between.
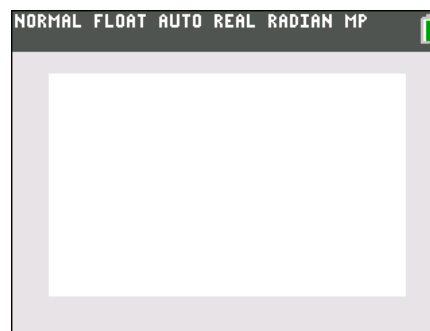
    Press [2nd] [STAT PLOT] to set up the plot as shown.. Press [ZOOM] and choose **9:ZoomStat**.

    ```
    NORMAL FLOAT AUTO REAL RADIAN MP

    Plot1 Plot2 Plot3
    On  Off
    Type: ⌐ ∕ ▬ ▢ ▢ ∕
    Xlist:L₁
    Freq:1
    Color:   BLUE
    ```

5. Draw the histogram at the right. Show the scale and labels.

6. What does the shape of the graph tells us about people's estimating skills? _____

    _____

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7. How do people's guesses compare with the actual distance?

    _____

8. How might this graph look if significantly more people participated?

    _____

    _____

9. What is another source of data that might have a similarly shaped graph?

    _____

    _____

Part 2 – Remembering Numbers

In this problem, you will see how many numbers people can remember.

10. Find *four* people to participate in a memory test. For each person, read the first 2 digits on the list and ask them to repeat them. Record the number correct repeated in the table. Then, read the next 3 digits on the list, ask them to repeat them, and record the number correct. Repeat this process until you have read 12 digits in a row to them and they have repeated the digits.

11. Average each row of responses. Press [STAT] and select **1:Edit…**. Enter the first and last columns of the table in L1 and L2.
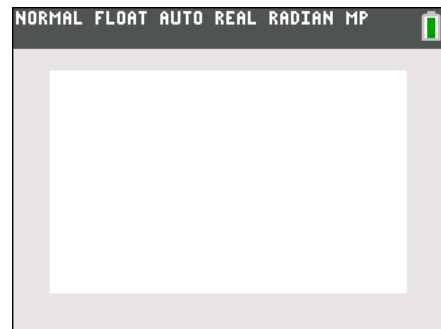
Number of Digits (L1)	Person 1 # Correct	Person 2 # correct	Person 3 # correct	Person 4 # correct	Average Correct (L2)
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					

12. Create a scatter plot of the data in L1 and L2. Sketch the graph to the right. Show the scale and labels.

13. How is the overall shape of this graph different from the one in Problem 1? _____

    _____

    _____

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14. Is the graph predictable? Are there any conclusions you can draw from this experiment?

    _____

    _____

15. Do you think there's a limit to how many numbers a typical person can remember? Explain.

    _____

    _____