The goal of this game is to choose five numbers whose average is as close as possible to 50.

Before starting the game all players should clear List 1 and set [MODE] to Float.

Each team should use two calculators, one to generate numbers and one to keep their chosen numbers.

Two numbers between 1 and 100 will be generated in each round.

Team 1 generates the first number using the randInt command. Each team decides whether to keep that number or to take the second number that will be generated. Then Team 2 generates the second number. A team who chooses the first number must ignore the second number. A team who does not choose the first number must keep the second number. Enter the chosen number into List 1.

After five rounds, calculate the mean. The team with the mean closest to 50 wins.

To generate random numbers, press [MATH] [>>] to get the PRB menu and choose 2: randInt

Then enter the lower and upper bounds.

After getting the first random number on the Home Screen, another random number will be generated each time [ENTER] is pressed.

Variations:

1. Set [MODE] to display two digits after the decimal point. Press [MATH] [>>] to get the PRB menu and choose 1: rand to generate a decimal between 1 and 0. The team with the mean closest to 0.70 wins.

2. Each team generates a random integer between 1 and 10. The teams must decide whether to keep those two numbers to form a fraction or use the second set of two numbers to form a fraction. The teams choose which of their numbers is the numerator and which is the denominator. The team with the mean closest to 1/2 wins.
One-Variable Statistics with the TI-73

To calculate one-variable statistics, enter the data set in a list.

1. Press [LIST] to enter the List Editor and choose 1: Edit. Then enter the set of data in List 1.

2. Press [2nd] [STAT] [>>] to enter the MATH menu and choose:
   - 3: mean or
   - 4: median or
   - 5: mode.

3. To enter the list name after the command on the Home Screen, press [2nd] [LIST] and choose List 1.

4. Press on the Home Screen to calculate and display the one-variable statistics.
**Practice with One-Variable Statistics**

For each problem, create a set of numbers that has the required statistical value(s).

1. Start with the numbers 100 and 70. Add three more numbers to your set so that it has a mean of 100.

2. Start with the numbers 100 and 70. Add three more numbers to your set so that it has a median of 70.

3. Start with the numbers 100 and 70. Add three more numbers to your set so that it has a mode of 87.

4. Start with the numbers 100 and 70. Add three more numbers to your set so that it has a mean of 100 and a median of 75.

5. Start with the numbers 100 and 70. Add three more numbers to your set so that it has a mean of 100 and a mode of 90.

6. Create a set of three or more numbers where the mean, median and mode are all equal.

7. Create a set of three or more numbers where the median is the largest measure of average and the mode is the smallest.

8. Create a set of three or more numbers where the mean is the largest measure of average and the median is the smallest.
Final exam scores for 50 students in General Chemistry

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The Five-Number Summary

The 5-number summary for a group of data consists of the following five numbers:

1. L, the smallest value in the data set
2. Q₁, the first quartile (The first quartile is the 25th percentile.)
3. Q₂, the median
4. Q₃, the third quartile (The third quartile is the 75th percentile.)
5. H, the largest value in the data set

The difference between the first and third quartiles is called the interquartile range. It is the range of the middle 50% of the data.

A box-and-whiskers display is a graphic representation of the 5-number summary. The box represents the middle half of the data that lies between the two quartiles. The whiskers are line segments used to represent the other half of the data. One line segment represents the quarter of the data that is smaller than the 1st quartile. The other line segment represents the quarter of the data that is larger than the 3rd quartile. A vertical line is placed in the box at the location of the median.
Box and Whisker Plots

To create a box and whisker plot for data in List 1, press \( \text{2nd} \{y=\} \) and choose Plot1.

Then set the calculator for a boxplot.

Press \( \text{ZOOM} \) and choose 9: \text{ZoomStat} to let the calculator choose an appropriate viewing window.

Press \( \text{GRAPH} \) to see the box and whisker plot.

Suppose the boxplot below represents the final exam grades for 50 chemistry students. Write a paragraph discussing how the students did on the exam.
What’s My Data?

1. For each of the box and whisker plots, create a 7-value data set that would create it.

Warning: You may need to change the automatic window settings.