Lists and the Graphic Calculator

Here is the basic data received from one class answering the question on how far they travelled to school (nearest km).

2, 0, 0, 2, 1, 4, 0, 1, 3, 5, 2, 1, 1, 1, 0, 1, 0, 0, 2, 0, 8, 0, 1, 1

Enter these results into your graphic calculator (check all lists have been cleared before you start
STAT 4:ClrList ENTER L1, L2,L3 ENTER
Then *STAT 1:Edit ENTER 2 ENTER 0 ENTER … 1 ENTER*

On the home screen (use *2nd QUIT* to get there) enter *L1 (6)*.   What information does this give you?
Write down the values of L1 (10) and L1 (24).

To sort the data into order:
STAT 2:SortA(ENTER   L1 check in your lists.

To work out the: number of values (n); mean ($\bar{x}$); population standard deviation (σx); sample standard deviation (sx); minimum value; maximum value; sum of x ($\sum x$); sum of x^2 ($\sum x^2$); lower quartile (Q1); median; upper quartiles (Q3).
STAT CALC 1:1-Var Stats ENTER L1 ENTER.

To change the units you are working in eg in this example you may wish to change from km to miles and store this information into List 2   *L1 x 1.6 STO> L2 ENTER.*
To work out answers to questions such as "How many people live 2 or more km from school"   *L1 TEST 4:≥ ENTER 2 ENTER.*

For the given data use your calculator to work out:

1. Average (mean) distance pupils travel to school
2. Median distance to school
3. The number of pupils in this class
4. Minimum and maximum distance to school
5. Upper quartile of the data
6. Sum of the squares ($\sum x^2$)
7. Standard deviation between distances
8. How many pupils travel 3 or more km to school
9. How many pupils travel less than 1 mile

Can you show the information in graphical form?
Try to get your calculator to draw a box plot and a histogram of the data.

Now use the data from your own class and make up a series of questions for someone else to try using a graphical calculator.

Answers
 1. 1.5 km;   2. 1km;   3. 24 pupils;   4. 0km min 8km max;
 5. 2km;   6.138;   7. 1.87km;   8. 4 pupils;   9. 8 pupils.