Chapter 5 / **Example 7**

Calculating mean and standard deviation

It is expected that a GDC will be used to calculate the population standard deviation and variance.

A group of 40 students were asked how many times they visited the dentist in the last year.
Their responses were:
3, 0, 2, 5, 7, 6, 8, 0, 4, 1, 6, 3, 0, 5, 6, 5, 3, 6, 2, 7, 6, 0, 4, 4, 6, 6, 5, 7, 0, 1, 2, 5, 8, 0, 4, 3, 4, 6, 7, 5.
Calculate the mean and standard deviation for this data.

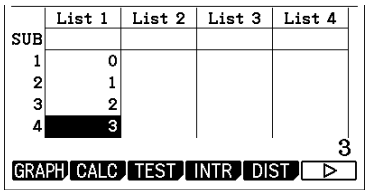
The data can be summarized in a frequency table

x	0	1	2	3	4	5	6	7	8
f	6	2	3	4	5	7	8	3	2

Press MENU 2 STAT to display the List Editor screen.

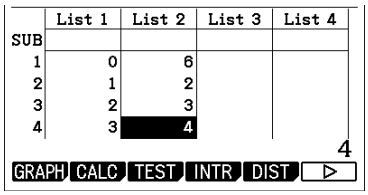
Type 0, 1, 2, 3, etc. in the first column.

Press EXE after each number to move to the next cell.



Press ▶ to move to the next column.

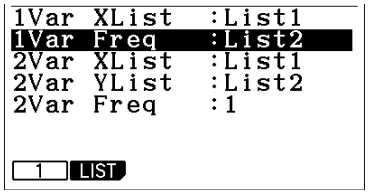
Enter the frequencies of each of the number of visits in the second column.



To calculate an estimate of the mean and standard deviation of the number of visits represented in the table.

Press F2 CALC and F6 SET.

Set 1Var XList to List1 and 1Var Freq to List2 (press F2 LIST type 2 and press EXE).

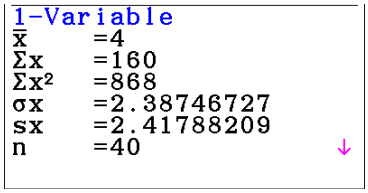


Press EXIT and F1 1-VAR.

The GDC displays a list of statistics for the data.

The results show that the mean ($\bar{x}$) is 4.

So the average number of visits to the dentist is 4.
For the standard deviation, it is important to select the population standard deviation, (σx) = 2.39.



Chapter 5 / **Example 7**

Calculating mean and standard deviation

Press MENU 1 RUN·MAT to display the Run-Matrix screen for arithmetical calculations.

The statistics that you calculated earlier are all stored as variables.

To calculate the variance press VARS F3 STAT F1 X F5 σx.

Press x^2 and press EXE.

The variance is 5.7.