Chapter 6 / **Example 6**
Calculating the mean from a frequency table

The following example is to calculate an estimate of the mean. This method, however, also calculates a number of other useful statistics.

This table shows the ages (in years) of 10 pet cats.

Age (x)	***f***
$0 < x \leq 2$	2
$2 < x \leq 4$	4
$4 < x \leq 6$	3
$6 < x \leq 8$	1

Find an estimate of the mean age of the cats.

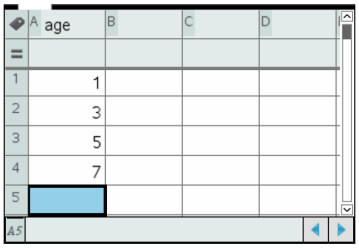
To estimate the mean, you will use the mid-interval values of each of the intervals: 1, 3, 5, 7.

Open a new document and add a Lists & Spreadsheet page.

Type 'age' in the first cell.

Type the numbers 1, 3, 5, 7 in the first column.

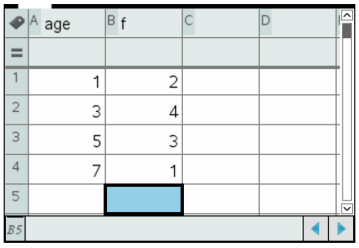
Press enter or ▼ after each number to move to the next cell.



Type 'f' in the cell to the right of 'age'.

Enter the frequencies of each of the ages in the second column.

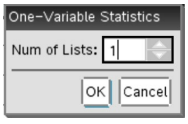
Use the ▲ ▼ ▶ ◀ keys on the touchpad to navigate the spreadsheet.



To calculate an estimate of the mean of the ages represented in the table

Press menu 4:Statistics | 1:Stat Calculations | 1:One-Variable Statistics…

Click the touchpad on OK or press enter.



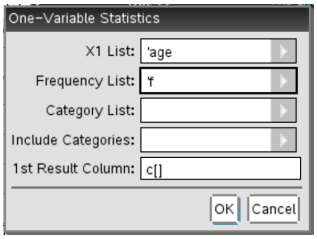
Open the drop down lists with ▶ and select using ▼ and enter.

Choose 'age' for X1 List and 'f' for Frequency List.

The next two choices remain empty.

The 1st Result Column can remain as c[] as this is the third column in the spreadsheet.

Press enter or use the touchpad to click OK.



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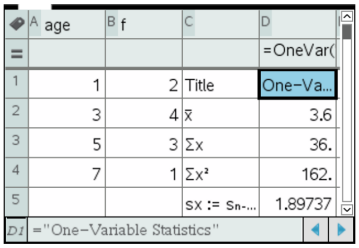
The results show that the estimate of the mean ($\bar{x}$) is 3.6.

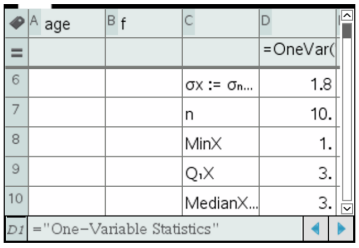
So the average age of the cats is 3.6 years.

The table also shows that the sum of the ages (Σx) is 36, the sum of the squares of the ages (Σx^2) is 162 and the sample standard deviation is 1.89…



Scrolling down shows further values.

The population standard deviation is 1.8, the number of cats is 10, the minimum age is 1, the lower quartile is 3 and the median age is 3.



Further scrolling reveals yet more statistics.

The upper quartile is 5, the maximum age is 7 and SSX (used in calculating standard deviation) is 32.4.