

Chapter 2 / Example 2

Measures of central tendency

The number of days of sunshine in Helsinki in January was recorded for a period of 35 years and the data is given in the frequency table:

- State the modal number of days of sunshine in January in Helsinki for the period.
- Calculate the mean number of days of sunshine in January in Helsinki for the period.
- Determine the median number of days of sunshine in January in Helsinki for the period.
- State a reason why the mode might not be the best average to use to be a fair representation of the number of days of sunshine in Helsinki.
- Comment on how a “day of sunshine” might be defined.

Number of days of sunshine	Number of years
3	1
4	2
5	1
6	2
7	7
8	5
9	9
10	8

Press **STAT** 1:Edit and press **ENTER**

Type 3, 4, 5, ... 10 in the first column.

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

Note: If the list contains other numbers, you can clear it by pressing **[STAT]** 4:ClrList and press **[ENTER]**. The home screen displays ClrList. Press **[2nd]** **[1]** **[L1]** and press **[ENTER]**. Press **[STAT]** 1:Edit and press **[ENTER]** to return to the table.

L1	L2	L3	L4	L5	1
3	-----	-----	-----	-----	
4					
5					
6					
7					
8					
9					
10					

L1(9)=

Press to move to the next column.

Enter the frequencies (number of years) of each of the number of days in the second column.

[illegible]

The TI-84 Plus C will not find the mode of a set of data. The mode is simply the data item with the largest frequency. Hence the modal number of days is 9 as the frequency is 9.

To calculate an estimate of the mean of the number of days.

Press **STAT** and **▶** to access the CALC menu.

Select 1:1-Var Stats and press **ENTER**.

Enter L_2 as the FreqList by pressing $\boxed{2\text{nd}} \boxed{2} \boxed{[L_2]}$.

Navigate to Calculate and press **[ENTER]**.


1-Var Stats
List:L1
FreqList:L2
Calculate

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The results show that the estimate of the mean (\bar{x}) is 7.94.
So, the mean number of days of sunshine is 7.94 days.

```
1-Var Stats
x̄=7.942857143
Σx=278
Σx²=2330
Sx=1.893376336
σx=1.866132091
n=35
minX=3
↓Q1=7
```

Scroll down using .

The table of statistics shows that the median is 8.
So, the median number of days of sunshine is 8 days.

```
1-Var Stats
↑Sx=1.893376336
σx=1.866132091
n=35
minX=3
Q1=7
Med=8
Q3=9
maxX=10
```

Because there are 18 days with less sunshine than the mode but only 8 with more sunshine than the mode.

In January, there are 6 – 8 hours of daylight each day. A sunny day could be one where about half the day, say 3 hours, is sunny.