

CONFIDENCE INTERVALS USING THE T-DISTRIBUTION

TI-83 INSTRUCTIONS

These instructions show how to calculate a confidence interval for the mean of a population from a sample.

The fat content (in grams) of 30 randomly selected pies at the local bakery was determined and recorded as:

15.1 14.8 13.7 15.6 15.1 16.1 16.6 17.4 16.1 13.9 17.5 15.7 16.2 16.6 15.1 12.9 17.4
16.5 13.2 14.0 17.2 17.3 16.1 16.5 16.7 16.8 17.2 17.6 17.3 14.7

A 98% confidence interval for the average fat content of all pies made at this bakery can be calculated as follows:

Step 1: Press **[STAT]** and choose **1:Edit...** from the **EDIT** menu.

Enter the above data into **List 1**.

L1	L2	L3	1
15.1			
14.8			
13.7			
15.6			
15.1			
16.1			
16.6			
L1(1)=15.1			

Step 2: Press **[STAT]** and use **[▶]** to scroll to **TESTS** and then choose **8:TInterval**.

EDIT CALC TESTS
3↑2-SampZTest...
4↑2-SampTTest...
5↑1-PropZTest...
6↑2-PropZTest...
7↑ZInterval...
8↑TInterval...
9↑2-SampZInt...

Step 3: Set up the screen as shown to calculate the 98% confidence interval.

TInterval
Inpt: DATA Stats
List: L1
Freq: 1
C-Level: .98
Calculate

Step 4: Highlight **Calculate** and press **[ENTER]**.

So, we are 98% confident that the average fat content of all pies made at this bakery lies between 15.283 and 16.51 grams.

TInterval
(15.283, 16.51)
\bar{x} =15.89666667
Sx=1.365203871
n=30