

CONFIDENCE INTERVALS USING THE Z-DISTRIBUTION

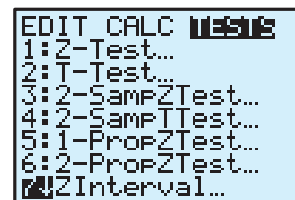
TI-83 INSTRUCTIONS

These instructions show how to calculate a confidence interval for the mean of a population from a sample given that the standard deviation of the population is known.

The mean weight of a sample of yabbies from a dam is found to be 84.6 grams. The population standard deviation is known to be 16.8 grams.

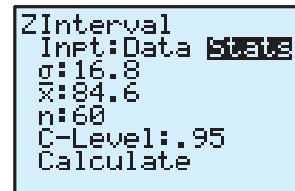
A 95% confidence interval for the population mean can be calculated as follows:

Step 1: Press **STAT** and use **▶** to scroll to **TESTS** and then choose **7:ZInterval**.



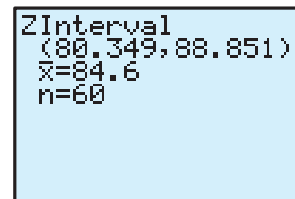
```
EDIT CALC TESTS
1:Z-Test...
2:T-Test...
3:2-SampZTest...
4:2-SampTTest...
5:1-PropZTest...
6:2-PropZTest...
7:ZInterval...
```

Step 2: Set up the screen as shown to calculate the 95% confidence interval.



```
ZInterval
Inpt:Data  [DATA]
σ:16.8
x̄:84.6
n:60
C-Level:.95
Calculate
```

Step 3: Highlight **Calculate** and press **ENTER**.



```
ZInterval
(80.349,88.851)
x̄=84.6
n=60
```

So, we are 95% confident that the population mean weight of yabbies lies between 80.349 and 88.851 grams.