

## THE T-TEST

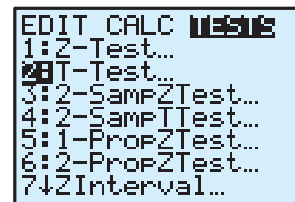
### TI-83 INSTRUCTIONS

The average house price in a suburb was known to be \$235 000. A sample was taken in 2005 to see whether or not the average price had changed.

200 houses were sampled and the mean was found to be \$215 000 with an unbiased estimate of the standard deviation of \$30 000.

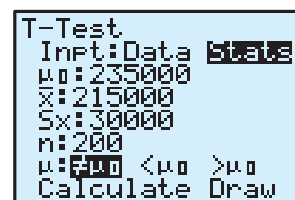
The following steps can be used to determine if the average house price has changed:

*Step 1:* Press **STAT** and use **▶** to scroll to **TESTS** and then choose **2:T-Test**.



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

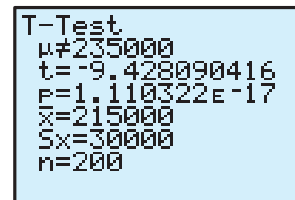
*Step 2:* Set up the screen as shown.



```
T-Test
Inpt:Data Stats
μ₀:235000
x̄:215000
Sx:30000
n:200
μ:≠μ₀ <μ₀ >μ₀
Calculate Draw
```

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

You can also draw the distribution by highlighting **Draw** and pressing **ENTER**.



```
T-Test
μ≠235000
t=-9.428090416
p=1.110322E-17
x̄=215000
Sx=30000
n=200
```

The  $p$ -value is less than 0.05, so we reject  $H_0$ . There is sufficient evidence (at the 0.05 level) that the mean is smaller in 2005 than it was in 2004.

Note: The  $p$ -value is different from that obtained from the Casio calculator.

