Chapter 8 / **Example 7**
The *t*-test

Mr Arthur gives his two Chemistry groups the same test. He wants to find out if there is any difference between the achievement levels of the two groups.

The results are:

Group 1	54	62	67	43	85	69	73	81	47	92	55	59	68	72
Group 2	73	67	58	46	91	48	82	81	67	74	57	66		

a   Write down the null and alternative hypotheses.

b   Find the *t*-value and *p*-value for a *t*-test at the 5% significance level.

c   Write down the conclusion to the test.

Press STAT 1:Edit and press ENTER

Enter the levels for Group 1 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*.

Press ▶ to move to the next column.

Enter the levels for Group 2 in the second column.

To perform a two-tailed *t*-test for the two groups

Press STAT and ▶ ▶ to access the TESTS menu.

Select 4:2-SampTTest and press ENTER.

Since this is a two-tailed test leave μ1≠μ2.

Choose Yes for Pooled and leave the remaining fields unchanged.

Navigate to Calculate and press ENTER.

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t-value = −0.235, *p*-value = 0.816

Since 0.816 > 0.05, so you accept the null hypothesis: there is no significant difference between the two groups.

```
2-SampTTest
µ1≠µ2
t=⁻.2349643711
p=.8162295679
df=24
x̄1=66.21428571
x̄2=67.5
Sx1=14.0886128
↓Sx2=13.6947236
```