

# Test for comparing one proportion to a value in XLSTAT

[demoProportion.xls](#)

## Dataset for comparing one proportion to a value

An Excel sheet with both the data and the results can be downloaded by clicking [here](#).

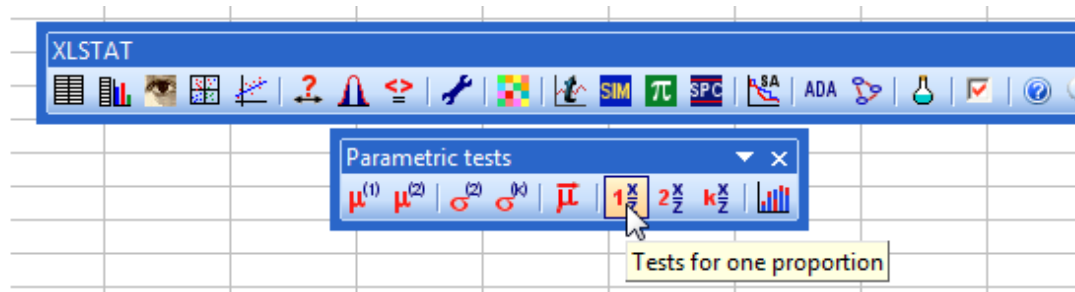
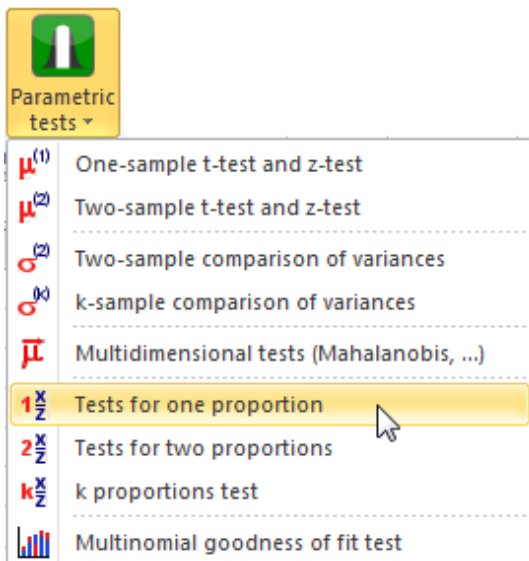
The data are the results of the launch of a coin 30 times.

## Goal of this tutorial

We would like to assess if the coin is biased or not so we want to compare the results to the proportion 0.5 so half of the time a tail, half of the time a head.

## Setting up a test for comparing one proportion to a value

To start the proportion test go to the menu **Parametric test / Tests for one proportion**.

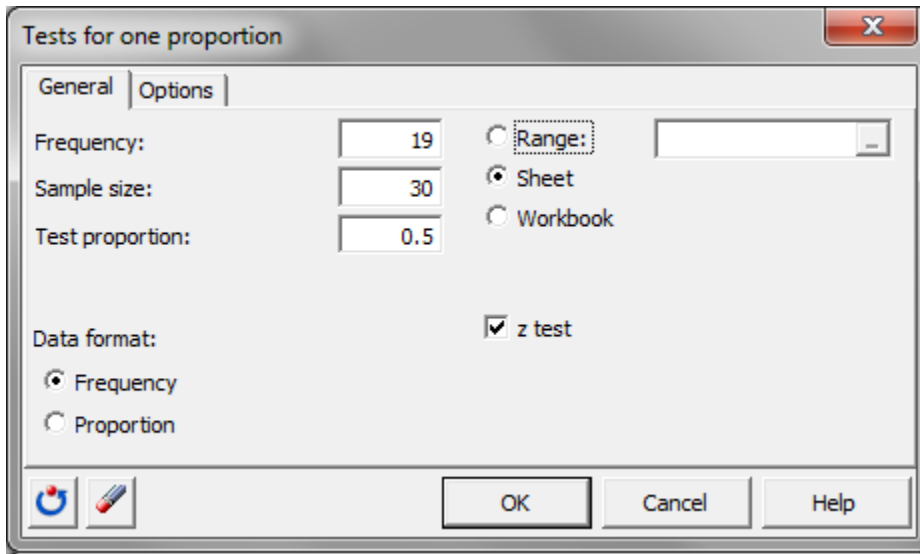


In the **General** tab, fill in the following information:

1. Frequency: 19
2. Sample size: 30
3. Test proportion: 0.5

#### 4. Data format: Frequency

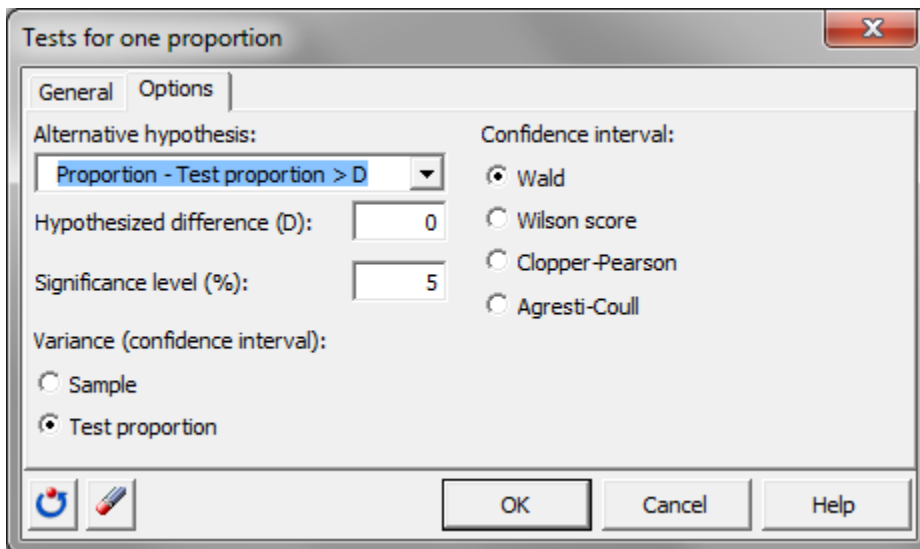
Select the option **z test** and go to the next tab.



As an alternative hypothesis choose the option **Proportion – Test proportion > D** as 19 is bigger than the expected frequency of 15.

The default significance level is left as is: 5%.

The **Variance (confidence interval)** which is an option that appears only when using the **Wald** confidence interval should be set to **Test proportion** as we want to calculate the confidence interval on the 0.5 proportion.



When ready click on **OK**.

## Results of a test for comparing one proportion to a value

The result is that as the p-value for this test is 0.072 which is superior to the 0.05 limit, the null hypothesis should be accepted and the difference between the proportions is equal to 0. This means that the coin is not biased.

95% confidence interval on the proportion (Wald):

] 0,454; 0,812 [

z-test for one proportion / Upper-tailed test:

Difference	0,133
z (Observed value)	1,461
z (Critical value)	1,645
p-value (one-tailed)	0,072
alpha	0,05

Test interpretation:

H0: The difference between the proportions is equal to 0.

Ha: The difference between the proportions is greater than 0.

As the computed p-value is greater than the significance level  $\alpha=0,05$ , one cannot reject the null hypothesis H0.

The risk to reject the null hypothesis H0 while it is true is 7,21%.

The following video demonstrates how to run a proportion test on one proportion in XLSTAT.

[http://www.youtube.com/watch?feature=player\\_embedded&v=jD7-Tw\\_X1\\_0](http://www.youtube.com/watch?feature=player_embedded&v=jD7-Tw_X1_0)