

TECHNOLOGY CORNER for Section 11.1, Page 689

26. Chi-square test for goodness of fit with HP Prime

You can use the HP Prime to perform the calculations for a chi-square test for goodness of fit. We'll use the data from the hockey and birthdays example to illustrate the steps.

1. Set up the test.

- Press **Apps** and tap the *Inference* app icon. The app opens in Symbolic view.
- Tap the **Method** field and select χ^2 test.
- By default, the **Type** field is set to Goodness of Fit; if it is not, tap it and make this selection.
- The **Expected** field lets you select to provide either expected counts or probabilities. For this example, we choose to provide the probabilities. The completed Symbolic view appears below.

Inference Symbolic View

Method: χ^2 test

Type: Goodness of Fit

Expected: Probability

Choose an inferential method

Choose

2. Enter the data.

- Press **Num** to enter Numeric view. You will see two lists: ObsList for the observed counts and ProbList for the expected probabilities. Enter the four observed counts in ObsList and the four equal probabilities in ProbList. The data can be found on Page 688. The completed Numeric view is shown below.

Inference Numeric View

| | ObsList | ProbList |
|---|---------|----------|
| 1 | 32 | 0.25 |
| 2 | 20 | 0.25 |
| 3 | 16 | 0.25 |
| 4 | 12 | 0.25 |
| 5 | | |

Enter value or expression

Edit More Go To Import Make Calc

3. View the results.

- Tap **Calc** to see the results shown below. The χ^2 value is displayed, along with its associated probability and the degrees of freedom.

Stats

| | |
|----------|---------------|
| χ^2 | 11.2 |
| P | 0.01069212909 |
| DF | 3 |

11.2

More Stats* Exp Cont OK

- Tap **Exp** to see the expected counts.

Stats

| | |
|---|----|
| 1 | 20 |
| 2 | 20 |
| 3 | 20 |
| 4 | 20 |

1

More Stats Exp* Cont OK

- Tap **Cont** to see the χ^2 contributions by category. Tap **OK** when you are done.

Stats

| | |
|---|-----|
| 1 | 7.2 |
| 2 | 0 |
| 3 | 0.8 |
| 4 | 3.2 |

1

More Stats Exp Cont* OK

The results agree with our previous calculations.