How to Program The
Chi-Square Goodness of Fit (CHIGOF)

Press [PGRM] > NEW and hit enter.
Enter the name CHIGOF and hit enter

Now type in the following into your calculator

\[ \frac{(L_1 - L_2)^2}{L_2} \to L_3 \]
\[ \text{sum}(L_3) \to C \]
\[ \text{dim}(L_2) - 1 \to D \]
\[ \text{Disp} "\text{CHI SQUARE}=" \]
\[ \text{Disp} C \]
\[ \text{Disp} "\text{DF}=" \]
\[ \text{Disp} D \]
\[ x^2 \text{cdf}(C, 99999, D) \to P \]
\[ \text{Disp} "\text{P-VALUE}=" \]
\[ \text{Disp} P \]
\[ \text{Stop} \]

$L_1$ can be found by pressing [2ND] > [ 1 ]
$\to$ can be found by pressing [STO→]
\text{sum}() can be found by pressing [2ND] > [STAT] > select MATH > select sum( and press [ENTER]
\text{dim}() can be found by pressing [2ND] > [x−1] > select MATH > select dim( and press [ENTER]
\text{Disp} can be found by pressing [PRGM] > select I/O > select Disp and press [ENTER]
= can be found by pressing [2ND] > [MATH] > select = and press [ENTER]
\text{x}^2 \text{cdf}() can be found by pressing [2ND] > [VARS] > select \text{x}^2 \text{cdf}()

https://www.youtube.com/watch?v=UGEukx2EaEk
Example 2 (page 560)
World Series Games. The table below lists the numbers of games played in the baseball World Series, as of the writing of the textbook. The table includes the expected proportions for the numbers of games in a World Series, assuming that in each series, both teams have about the same chance of winning. Use a 0.05 significance level to test the claim that the actual numbers of games fit the distribution indicated by the probabilities.

<table>
<thead>
<tr>
<th>Games Played</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
</tr>
</thead>
<tbody>
<tr>
<td>Actual World Series Contests</td>
<td>19</td>
<td>21</td>
<td>22</td>
<td>37</td>
</tr>
<tr>
<td>Expected Proportion</td>
<td>2/16</td>
<td>4/16</td>
<td>5/16</td>
<td>5/16</td>
</tr>
</tbody>
</table>

L₁ is ALWAYS the observed frequency and L₂ is the expected frequency. 99 comes from the total number of World Series Contests (19+21+22+37=99).