

CHI-SQUARE TESTS FOR TWO-WAY TABLES ON THE CALCULATOR



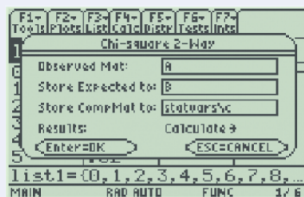
1. Enter the observed counts in matrix $[A]$.

- Press **APPS**, select Data/Matrix Editor and then New. . .
- Adjust your settings to match those shown.

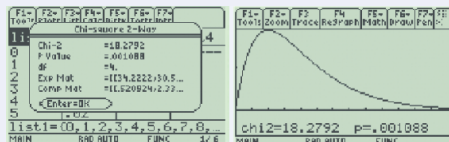
- Enter the observed counts from the two-way table in the same locations in the matrix.

- Specify the chi-square test, the matrix where the observed counts are found, and the matrix where the expected counts will be stored.

- In the Statistics/List Editor, press $\boxed{2\text{nd}} \boxed{F1}$ ($\boxed{F6}$), and choose Chi2 2-way. . .
- Adjust your settings as shown.



3. Choose “Calculate” or “Draw” to carry out the test. If you choose “Calculate,” you should get the test statistic, P-value, and df shown below. If you specify “Draw,” the chi-square distribution with 4 degrees of freedom will be drawn, the area in the tail will be shaded, and the P-value will be displayed.



4. To see the expected counts, go to the home screen and ask for a display of the matrix [B].

- Press $\boxed{2\text{nd}} \boxed{\square}$ (Var-LINK) and choose B.

F1=	F2=	F3=	F4=	F5=	F6=
Tools	Math	Calc	Other	Prbrn	Clcn Up
b					
[34.2222 30.5556 34.222					
10.716 9.5679 10.716▶					
39.0617 34.8765 39.061					
MAIN RAD AUTO FUNC 1/20					

AP® EXAM TIP You can use your calculator to carry out the mechanics of a significance test on the AP® exam. But there's a risk involved. If you just give the calculator answer with no work, and one or more of your values is incorrect, you will probably get no credit for the “Do” step. We recommend writing out the first few terms of the chi-square calculation followed by “. . .”. This approach might help you earn partial credit if you enter a number incorrectly. Be sure to name the procedure (χ^2 -Test for homogeneity) and to report the test statistic ($\chi^2 = 18.279$), degrees of freedom ($df = 4$), and P-value (0.0011).