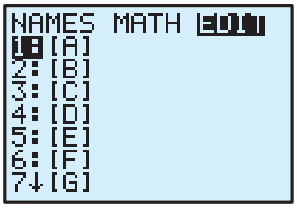
THE CHI-SQUARED TEST FOR INDEPENDENCE

TI-83 INSTRUCTIONS

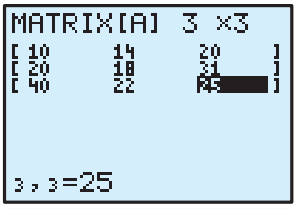
200 Hungarian males over the age of forty had their blood pressure taken and were categorised as having either severe, mild or no hypertension. Also noted was the amount of smoking they undertook - it was categorised as none, moderate and heavy. The data collected is summarised in the table below. It is wondered if hypertension and amount of smoking are independent at the 0.05 level of significance.

	Amount of smoking		
Degree **of** *hypertension*	*None*	*Moderate*	*Heavy*
s*evere*	10	14	20
mi*ld*	20	18	31
non*e*	40	22	25

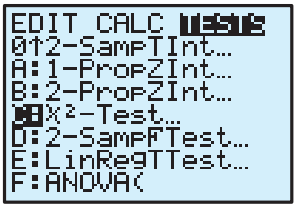
Step 1: Press **MATRX** and use ▶ to scroll to **EDIT** and then choose **1:[A]**.



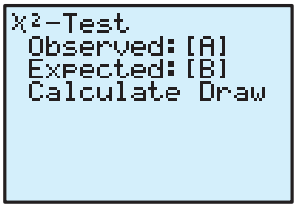
Step 2: Set the size of the matrix to 3 × 3 and enter the data in the table above as shown.



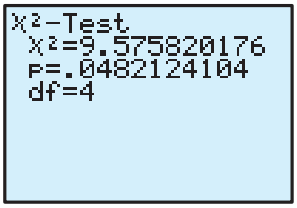
Step 3: Press **STAT** and use ▶ to scroll to **TESTS** and then choose **C:χ^2-Test**.



Step 4: Set up the screen as shown.



Highlight **Calculate** and press **ENTER** to perform the test.



Since the *p*-value is less than 0.05, we reject the hypothesis that degree of hypertension and amount of smoking are independent.

Press **MATRIX**, choose **2:[B]** then press **ENTER** to view the expected frequencies in matrix B.