

TOPIC: INDEPENDENCE TEST USING A TI-84

Independence Test Using a TI-84

◆ To run an independence test using a TI-84, enter data in a _____, then use the **C: χ^2 -Test** function.

EXAMPLE

A research hospital runs a trial with the following results. Determine if the group a participant was in is independent from their symptoms improving.

Let $\alpha = 0.05$.


	Group A	Group B	Placebo
Yes	44	38	13
No	26	32	57






H_0 :

H_a :

Because P -value = ____ [$<$ | $>$] α , we [**REJECT** | **FAIL TO REJECT**] H_0 .

There is [**ENOUGH** | **NOT ENOUGH**] evidence to conclude that whether a participant's symptoms improved is dependent on the group the participant was in.

**HOW TO: Independence Test on TI-84**

- Enter data in matrix
  (matrix)
- ,  **TESTS**
 **C: χ^2 -Test**
- Observed: [A]**
Expected: [B]
Calculate Draw

PRACTICE

A student performs a Goodness of Fit Test using technology to see if pet ownership is independent of relationship status. They get the following results: $\chi^2 = 0.545$ & $p = 0.7614$. What can they conclude about pet ownership and relationship status?

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EXAMPLE

A restaurant claims that customer satisfaction rating (out of 5) is independent of which of their three locations the patron dined at, so they collect data from a random sample of diners shown below. Perform an independence test for the claim with $\alpha = 0.05$.

	5	4	3	2	1
Location X	26	45	31	13	6
Location Y	31	56	29	12	9
Location Z	56	99	60	25	16

H_0 :

H_a :

Because P -value [< | >] α , we [REJECT | FAIL TO REJECT] H_0 .

There is [ENOUGH | NOT ENOUGH] evidence to conclude that a student's final grade is dependent on the instruction delivery method of the class.

HOW TO: Independence Test on TI-84

1) Enter data in matrix

2ND **x⁻¹** (matrix)

2) **STAT**, **>** **TESTS**

▼ **C: χ^2 -Test**

3) Observed: [A]

Expected: [B]

Calculate Draw

EXAMPLE

A math textbook company claims that the proportion of books sold for each subject is the same across book type sold. They collected data on a random sample of book purchases. Perform a homogeneity test for the claim with $\alpha = 0.05$.

	STATS	CALC	ALG	Other
Hardcover	27	48	29	11
Softcover	30	57	26	14
Digital	98	67	49	2

H_0 :

H_a :

Because P -value [< | >] α , we [REJECT | FAIL TO REJECT] H_0 . There is [ENOUGH | NOT ENOUGH] evidence to conclude that the proportion of books sold for each subject is not the same across book type.