TOPIC: INDEPENDENCE TEST USING A TI-84

Independence Test Using a TI-84

ullet To run an independence test using a TI-84, enter data in a ______, then use the $C: \chi^2$ -Test function.

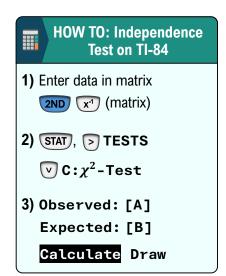
EXAMPLE

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.



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?

TOPIC: INDEPENDENCE TEST USING A TI-84

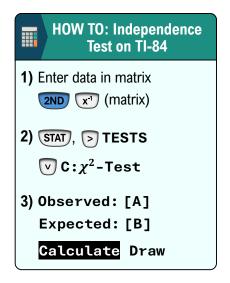
EXAMPLE

A college claims that the instruction delivery method is independent of the final grade students in the class receive, so they collect a random sample of students and record the data below. Perform an independent test for the claim with $\alpha=0.05$.

| | Α | В | C | D | E |
|-----------|----|----|----|----|----|
| Online | 26 | 45 | 31 | 13 | 6 |
| Hybrid | 31 | 56 | 29 | 12 | 9 |
| In-Person | 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.



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.