

QUESTION 2b

STEP 1: STATE THE HYPOTHESES

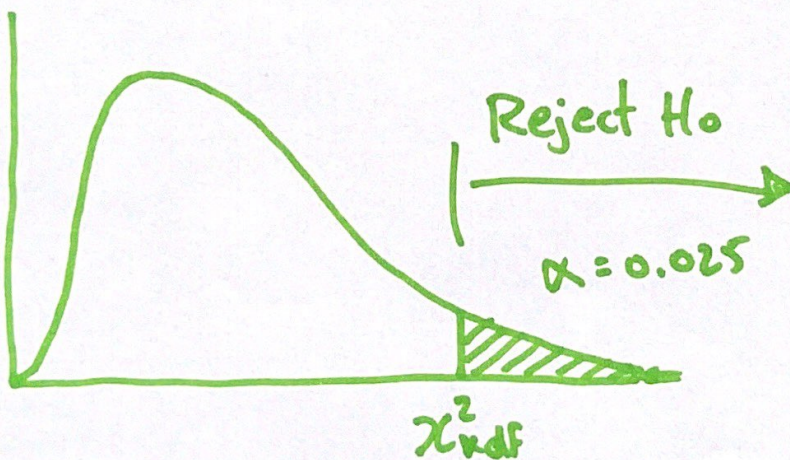
H_0 : The two variables "Student" and "Reason" are independent

H_1 : "Student" and "Reason" are dependent

STEP 2: SIGNIFICANCE LEVEL

$$\alpha = 0.025$$

STEP 3: REJECTION REGION



$$\begin{aligned} df &= (r-1)(c-1) \\ &= (2-1)(2-1) \\ &= 1 \end{aligned}$$

$$\chi^2_{0.025, 1} = 5.02$$

REJECT H_0 IF $\chi^2 > 5.02$

STEP 4: TEST STATISTIC

$$\chi^2 = 3.29 \quad (\text{given})$$

STEP 5: CONCLUSION

Do not reject the H_0 . There is not enough evidence at the 2.5% level of significance that "student" and "Reason" are dependent.

QUESTION 2c

The pooled variances t -test can be used when:

- two population means of interval data are being compared
- the two population variances can be assumed to be equal
- the two populations are normal