

Grader's comments (Homework #3)

1.

e. * level of significance describes the probability that one rejects a true null hypothesis; use this term to describe a test procedure. * level of confidence describes the probability that the true parameter lies within the estimated region; use this term to describe a confidence interval construction.

f. false. The level of significance of the test is 5%, i.e. there is 5% chance that we reject while the null is true. However, we are not saying about the probability distribution of the underlying parameter. The term "confidence" refers to the procedure of confidence interval estimation.

2.

3. This is almost too simple to write down, but I would just want to remind everyone that the quantile function of the student t distribution for the following number are:

$$* \text{qt}(.95, 22) = 1.717144$$

$$* \text{qt}(.05, 22) = -1.717144$$

$$* \text{qt}(0.975, 22) = 2.073873$$

The number is the answer to the following question: given the probability (.95, .05, or .975) with degree of freedom 22, what is upper cut-off point (x) so that the $Pr(\infty, x)$ is the said probability.