

Homework 6.3

From 6.2, $H_0: \mu=2$ and $H_a: \mu \neq 2$ with a significance level of α , some researchers will simply state “ $\mu \neq 2$ with $P=0.0047$ ”:

Here, a common misconception would be that the p-value is some sort of “truthy” probability, meaning that simply seeing a p-value, could mean that a hypothesis is “true” or “correct.” These types of misconceptions often don’t even distinguish between H_0 and H_a . Therefore, it might be assumed that a p-value as tiny as 0.0047, could mean that the hypothesis (again, unclear which one) is true because the probability of it being wrong is very, very tiny. Alternatively, a tiny p-value, may also be interpreted to mean that the hypothesis (which one?) is very unlikely to be true, because its “probability” is extremely tiny.

In short, the type of misconception I am trying to convey is that p-value is interpreted as a probability associated with an unclear hypothesis, and furthermore, it remains unclear if that probability is for determining the validity or falsehood of the unclear hypothesis.