

Answer on Question#40057 – Math – Statistics and Probability

In the recent board examination for nurses, it is claimed that the average performance of the nurses is 80 with a standard deviation of 5. Would you agree to this claim if a random sample of 100 nurses who took the exam showed an average of 85? Use 1% level of significance.

We will use 2-tailed t-test to check the claim at 1% level of significance.

Null hypothesis: $\mu = 80$

Alternative hypothesis: $\mu \neq 80$

Test statistic:

$$t = \frac{(85 - 80) \cdot \sqrt{100}}{5} = 10$$

Critical values are: ± 2.62

Since t is in the rejection region, we reject null hypothesis.

We conclude that there is enough evidence to conclude that the average is not 80 at 1% level of significance.