

Answer on Question #78835 – Math – Statistics and Probability

Question

Given that $H_0: \mu \leq 15$

$H_1: \mu > 15$

A sample of 40 provides a sample mean of 16.5 and a sample standard deviation of 7.

- i. At $\alpha = 0.02$, what is the critical value for z and what is the rejection rule?
- ii. Compute the value of the test statistics z .

Solution

i. $z_{crit} = z_{0.02} = 2.054$.

Reject the null hypothesis if $z > 2.054$.

ii. $z = \frac{\bar{x} - \mu}{\sigma / \sqrt{n}} = \frac{16.5 - 15}{7 / \sqrt{40}} = 1.36 < 2.054$.

Fail to reject the null hypothesis.