QUIZ 4   BUM2413, APPLIED STATISTICS, SEM II 2013/2014

MATRIC NO.: CB13006   SECTION: 10 h

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1. In the past, the mean calling time to customers to a computer help-line has been 18 minutes. The computer company conducts a training scheme for its telephone consultants with the intention of reducing this calling time. After the training scheme, a sample of 35 calling times had a sample mean of 16.3 minutes with standard deviation of 5 minutes.

                                                                            (10 Marks)

(a) Extract important information from the statement above by using the correct notations.

$n = 35$
$\bar{x} = 16.3$
$s = 5$
$\mu = 18$

(b) Is there sufficient evidence that the training scheme has been successful at $\alpha = 0.05$?

Step 1 $H_0 : \mu \geq 18$
          $H_1 : \mu < 18$ (claim)

Step 2   since σ^2 is unknown , $n \geq 30$

$$Z_{test} = \frac{16.3 - 18}{5/\sqrt{35}} = -2.0115$$

Step 3 $\alpha = 0.05$, the test is left tailed test hence the critical value $Z_{0.05} = -1.6449$

Step 4

Z_{test}

$Z_{0.05}$
-1.6449

since $Z_{test} = -2.0115 < Z_{0.05} = -1.6449$
the decision reject H_0.

Step 5 : Therefore , there is no sufficient evidence that the training scheme has been successful at $\alpha = 0.05$