KFUPM | Term 162 | Date: 7/5/2017

Math & Stat Dept. | STAT 319 | Duration: 20 minutes

Quiz #4

Name: ID#: Section 4 Serial

Q1: The shelf life of a photographic film is of interest to the manufacturer. The manufacturer observes the following shelf life for eight units chosen at random from the current production:

108	134	124	116	128	163	159	134

a. Is there any sufficient evidence that the mean life is at most 125 days? Test at $\alpha = 0.05$ using the *p*-value approach.

Hypothesis: H_0: H_A:
Assumptions:
Test statistic:
p-value =
Decision Rule & Decision: If Reject H_0. Since
Conclusion (Interpretation):

b. What type of error you might have committed in your decision in part a? Explain.

P.T.O. ➔

***Q2:* (Bonus)** The fraction defective product produced by a production line is being analyzed. A random sample of 1000 units from the production line has 10 defectives. If you are testing that the defective proportion exceeds 0.011 and the sample results in a *statistic* value greater than 0.012, then the null hypothesis will be rejected.

a. Find the significance level of the test.

b. What is the probability of type II error given that $p = 0.013$?

c. Compute the power of the test if the true percentage of defective products is 1.3%.

With My Best Wishes