

Probability and Statistics

Testing of Hypothesis

1. Ten individuals are chosen at random from a normal population of students and their marks are found to be 63, 63, 66, 67, 68, 69, 70, 70, 71, 71. In the light of those data, discuss the suggestion that mean mark of the population of students is 66.
2. The following values gives the lengths of 12 samples of Egyptian cotton taken from a consignment : 48, 46, 49, 46, 52, 45, 43, 47, 47, 46, 45, 50. Test if the mean length of the consignment can be taken as 46.
3. A sample of 18 items has a mean 24 units and standard deviation 3 units. Test the hypothesis that it is a random sample from a normal population with mean 27 units.
4. A random sample of 10 boys had the I.Q's 70, 120, 110, 101, 88, 83, 95, 98, 107 and 100, Do these data support the assumption of a population mean L.Q. of 160?
5. The mean life of 10 electric motors was found to be 1450 hrs with S.D. of 423 hrs. A second sample of 17 motors chosen from a different batch showed a mean life of 1280 hrs with a S.D. of 398 hrs. Is there a significant difference between means of the two samples?

6. The marks obtained by a group of 9 regular course students and another group of 11 part time course students in a test are given below:

Regular	56	62	63	54	60	51	67	69	58		
Part time	62	70	71	62	60	56	75	64	72	68	66

Examine whether the marks obtained. by regular students and part time students differ significantly at 5% and 1% level of significance.

7. Two independent samples of sizes 7 and 9 have the following values:

Sample A:	10	12	10	13	14	11	10		
Sample B:	10	13	15	12	10	14	11	12	11

Test whether the difference between the mean is significant.

8. The average no. of articles produced by two machines per day are 200 and 250 with standard deviations 20 and 25 respectively on the basis of records of 25 days production. Can you regard both the machines equally efficient at 5% level of significance?

Answer Key

1. Accepted
2. Accepted
3. Rejected
4. Accepted
5. Accepted
6. Rejected
7. Accepted
8. Rejected

□□□



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