

1. A sample of size 150 provided the mean of 47.5. Can it be regarded as representative of population with mean 50 and standard deviation 12 at 5% level of significance. Also find the 95% confidence limits for the population mean using the sample data.
2. Two samples of size 30 each is selected. From two independent populations. With variances. 840 and 920 respectively. Are the selected samples Have Equal means at 5% level of significance. Also find 95% confidence limits for the difference of means.

x	y
52	22
27	34
2	8
49	83
76	68
72	64
77	15
71	57
95	32
55	99
68	98
29	39
97	38
17	96
98	92
6	14
20	1
16	65
91	95
88	18
13	27
5	62
59	75
69	8
19	84
73	70
39	63
86	9
7	6
85	11

3. A sample of size trout is selected from the population, which mean 1100. And standard deviation 275. Following are the records of the sample selected. Can the sample be regarded as the representative of parent population.

x
852
927
902
1149
1576
872
1177
1071
895
1155
868
1083
897
1700
1398
996
1220
1602
891
1088
1301
905
1059
1069
1319
1073
1639
1386
1607
1485

4. Two samples of size 50 each are selected to test the proportion of the smokers among the proportion. It is observed that 44% in the first population and 50% in the second samples are smokers. Is the hypothesis of lesser smokers in first population is significant. Also find the 95% confidence limits for the difference of proportion.

5. The time (in minutes) spent by 10 randomly selected customers using internet in a cyber cafe are as follows;

35 ,20 ,30 ,45 ,60 ,40 ,65 ,40 ,25 ,50

Can you say average time spent by customers is more than 30 minutes at 5% level of significance?

6. Two kinds of manure were applied to sixteen one-hectare plot, other condition remaining the same. The yields in quintals are given below:

Manure I	18	20	36	50	49	36	34	49	41
Manure II	29	28	26	35	30	44	46		

Is there any significant difference between the mean yields? Use 5% level of significance.

7. Memory capacity of 10 students was tested before and after training, state whether the training was effective or not from the following scores;

Roll No.	1	2	3	4	5	6	7	8	9	10
Before training	12	14	11	8	7	10	3	0	5	6
After training	15	16	10	7	5	12	10	2	3	8

8. Find confidence interval of mean assuming normal distribution for following data.  
height

78	55	68	48	65	76	57	55	65	75	51	61
68	67	76	78	71	56	57	67	58	51	50	58
50	77	55	48	70	55	58	70	56	52	74	61
69	76	61	68	78	56	78	57	66	66	74	66
48	73	71	70	62	74	76	50	69	75	65	48

9. Construct random data of size 5000 height of students categorized by gender. Considering minimum height of 120 cms. to 185 cms.
- Draw a sample of size by calculating appropriate sample size assuming the proportion of male and female are equal for 5 % desired margin of error.
  - Test the hypothesis of male and female are of equal in proportion for the population you have constructed.
  - Test the hypothesis of male are taller than female students at 5 % level of significance.
  - If the sample size is 500 what will be the change in decision for above hypothesis.
  - Find the 95% confidence limits of proportion of gender and 95 % confidence limits for the difference of height for both cases of sample.

10.