

① Entering college freshman have taken a particular high school achievement test for many years. and the upper quartile ($p=0.75$) is well established at a score of 195. A particular high school of its graduates to college, where they took the examination and obtained scores of 203, 168, 187, 235, 197, 163, 214, 233, 179, 185, 197, 216. To test $H_0: \eta_{0.75} = 195$ vs $H_1: \eta_{0.75} > 195$ at 5% l.o.s.

② Following are the yields (in kg) of a crop recorded from an experiment with median (m) = 20

15.4, 16.4, 17.3, 18.2, 19.2, 20.9, 22.7, 23.6, 24.5

To test $H_0: \eta_{0.5} = 20$ vs $H_1: \eta \neq 20$ at 5% l.o.s.

③ A random sample of size 10 from a continuous DF on $[0, 1]$ yields the following data:

0.59, 0.72, 0.47, 0.43, 0.31, 0.56, 0.22, 0.90, 0.96, 0.78

- ④ The seasonal rainfall in two stations is given below .
 To test whether the distribution of rainfall in two stations is same or not.

Station A 1011.7, 1066.82, ...

Station B 496.44, 541.76, ...

- ⑤ Hamilton depression scale factor measurements are taken on 9 patients after initialization of the therapy . Following table shows the measurements (x) taken at the first visit and the measurements (y) taken after the second visit

	1	2	...	9
x	1.83	...		1.30
y	0.878			1.29

- ⑥ The following data represents lifetime (hrs.) of batteries for two brands
- | | | | | | |
|---------|----|----|----|-----|----|
| Brand A | 40 | 30 | 40 | ... | 30 |
| Brand B | 50 | 50 | 45 | ... | 40 |

⑦ The following data give the ages of entering freshmen in independent random sample from three different universities A, B, C.

A	17, 19, 20, 21, 18	to test the hypothesis that the average age of entering freshmen at these universities are the same.
B	16, 16, 19	
C	21, 23, 22, 20, 19	

⑧ A random sample of 100 families in Bowling Green, Ohio, showed the following distribution of home ownership by family income.

Residential Status	Annual income (in \$)		
	less than 30,000	30,000 - 50,000	50,000 & above
Homeowner	10	15	30
Renter	8	17	20

Is home ownership in Bowling Green independent of family income?

⑨

