

LIST 5. INDEPENDENCE TESTS, CORRELATION COEFFICIENTS, REGRESSION

Task 1: The correlation between the time of aging and tastiness of Swiss cheese was studied. Length of aging was defined as: long, normal and short. Tastiness is classified at three levels: satisfactory, good and very good. The table below was obtained:

Time of aging \ Tastiness	Short	Normal	Long
Satisfactory	9	5	3
Good	4	12	6
Very good	1	6	14

Test the hypothesis that these characteristics are independent.

Task 2: Twenty portions of sausage for protein and the water and fat content were examined in a laboratory:

Protein	84,4	84,1	85,0	84,6	84,9	84,8	86,6	87,2	85,5	86,0
Water and fat	13,7	13,9	13,1	13,4	13,3	13,1	11,8	11,1	12,7	12,2

Protein	87,1	85,7	85,1	83,6	86,3	84,5	84,6	84,0	85,5	84,9
Water and fat	11,0	12,6	13,0	14,5	11,8	13,5	13,3	14,3	12,8	13,8

Examine whether there is a correlation between these characteristics.

Task 3: Two different intelligence tests were tested. The experiment was attended by 20 people. Each of them was examined to give the results of the two tests:

Test 1	502	678	727	724	930	576	527	705	737	714
Test 2	564	787	851	767	789	722	585	739	865	768

Test 1	999	955	529	603	858	825	504	646	663	582
Test 2	901	922	444	492	809	951	616	635	574	573

Based on the obtained results answer whether both tests are equally good to determine the IQ.

Task 4: Examine whether there is a correlation between the weight of the fibers of hemp measured in grams (Y) and its thickness measured in millimeters (X):

X	9,5	9,5	8,5	9,0	10,25	10,5	9,25	8,75	9,0	9,5
Y	7,8	9,6	6,7	7,6	7,8	9,2	7,4	6,3	6,4	7,0

X	9,75	9,5	9,5	8,75	8,0	9,5	8,5	10,0	10,5	10,25
Y	6,6	8,2	8,2	7,0	6,8	9,7	8,4	6,8	9,3	12,0

In case there is a correlation find the linear regression function.