

Exercise Series No 4

Exercise 1

In a maternity ward, out of 100 births, 44 boys and 56 girls were recorded.

Is this observation consistent with national statistics indicating proportions of 53% boys and 47% girls? Use a significance level $\alpha = 5\%$.

Exercise 2

We want to determine whether the success of a treatment is independent of the patient's blood pressure level. We have 250 observations distributed as follows:

Blood Pressure / Treatment	Failure	Success
Low	21	104
High	29	96

Does the success of the treatment depend on the blood pressure level? Use a significance level $\alpha = 5\%$.

Exercise 3

At a university where differentiated pedagogical initiatives are strongly encouraged, three groups of professors developed three different methods for teaching biostatistics, which were applied to three groups of students with the same initial level. In the exam, the results were as follows:

Method/Observed	Passed	Failed
Method-1	51	29
Method-2	38	12
Method-3	86	3

Can we say that one of the three methods is more effective than the others in terms of exam success? Use a significance level $\alpha = 5\%$.