

Homework 3

Total points : 10

1. Generate data from bivariate unimodal and bimodal distributions and draw contour plots of them. From those contour plots, detect the number of modes of those data.

Points : 5

2. Using appropriate statistical technique, compute the following integral:

$$\int_0^1 \frac{x^8(1-x)^8(25+816x^2)}{3164(1+x^2)} dx.$$

Compare the results for different sizes of the data in estimating π using the above integral.

Points : 5

Deadline: Deadline of submission is March 09, 2025.

Remark: You can use any package or any programming language to carry out the study.