

Q.R1. Compute value of Π

Compute Π using randomized algorithm

Q.R2. NUMERICAL INTEGRATION

Write a program that computes the value of the following integral using randomized algorithm.

$$\int_0^2 \sqrt{4 - x^2} dx$$

Q. R3. PRIMALITY TESTING

Write a program that test a number to be prime or not. Perform an analysis to compute the correctness?

Q. R4. MAJORITY ELEMENT

Write a program that FINDS majority element from a linear array using randomized algorithm. Show that probability of missing majority element is 0.00097.