MATHEMATICS BONUS HOMEWORK (25 points)

Evaluate the following integrals:

i. $\int_0^{\frac{1}{\sqrt{3}}} \sqrt{1 + \sqrt{x^2 + 1}} \, dx$

ii. $\int \frac{\cos 2\theta}{\cos^2\theta + si \ ^2\theta} \, d\theta$

iii. $\int_{\pi/4}^{3\pi/4} \cot^2\theta \, d\theta$

The deadline for submission of the assignment is 30 April 2024 (Tuesday) at 9:50 am. Assignments submitted after this date and time will not be accepted. Those who share their homework will not be evaluated.