<div align="center">

MAT 215 Complex Variables & Laplace Transformation

Assignment 1 Summer 2024

Total Marks: 20

Weight of the Assignment: 20%

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Assignment 1 Submission deadline 30th JUNE 2024 (SATURDAY) Between 8.00 PM and 10.00PM

<u>**Submission Online: (Pdf)**</u>

Submission folder will be provided in the google classroom on 30th June by

7.50 PM

Use Cam Scanner to create the PDF of your file. You must upload ONE single File. Multiple file upload under an individual student will not be considered and will earn "0" as an obtained mark of this assignment.

FILE NAME FORMAT: Student Number_SectionNo_Name. For example:

Sec 07: 12345678_07_Mehnaz Karim
Sec 09: 12345678_09_Mehnaz Karim
Sec 17: 12345678_17_Mehnaz Karim
Sec 19: 12345678_19_Mehnaz Karim
LATE SUBMISSION WILL HAVE PENALTY

Please use the following <u>Cover page</u> for the assignment:

MAT 215

Complex Variables & Laplace Transformation

Assignment 1

Summer 2023

STUDENT Name:

STUDENT ID:

Section Number:

Answer all the questions below: [5+5+5+5]

1. Sketch the region in $xy-$ plane represented by the following set of points:
$$\left|\frac{2z-3}{2z+3}\right| = 1.$$

2. Prove that $|(2\bar{z}+5)(\sqrt{2}-i)| = \sqrt{3}\,|2z+5|$.

3. Prove that $|z-i| = |z+i|$ represents a straight line.

4. Find all the roots of $z^4 = -16i$.