BRAC University

Department of Mathematics and Natural Sciences

Total Points: 15

Assignment-01

Course Code: MAT215

Complex

Name: @Name@

Student ID: @ID@

Section: @Section@

Semester: FALL 2025

Submission Date: _____

Assigned by

Partho Sutra Dhor
Lecturer, Department of MNS
BRAC University

Question 1

Find all possible values of z such that

$$z^{@}Q1_{n}@ = @Q1_{z}@$$

Locate them in the complex plane. Show that they are contained in a circle and find the radius of that circle. Also find the angular distance between two adjacent roots.

Solution:

Question 2

Consider the equation

$$@graph_equation@$$

Describe the above locus in the complex plane.

Solution:

Question 3

Consider the inequality

$$@graph_inequality@$$

Describe the above locus in the complex plane.

Solution:

Question 4

Solve the following equation for z:

$$e^{@Q4_a@z} = @Q4_z@$$

Express z as $x + iy$ where $x, y, \in \mathbb{R}$.

Solution:

Question 5

Prove that

$$@Q5_expression@$$

Solution:

Question 6

Solve for z:

$$@Q6_expression@$$

Solution:

Question 7

Solve

Solution:

Question 8

Solve

Solution:

Question 9

Solve

Solution:

Question 10

Solve

Solution: