🏛 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 3

❷ 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:**