



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


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Question 1

Find all possible values of z such that

$$z^n = 1 \quad \text{and} \quad z \neq 1$$

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 :

$$e^{4a+4az} = 4z$$


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

@Q7@

 Solution:

Question 8

@Q8@

 Solution:

Question 9

@Q9@

 Solution:


Question 10

@Q10@

 Solution:


Question 11

@Q11@

 Solution:


Question 12

@Q12@

 Solution:

Question 13

@Q13@

 Solution:


Question 14

@Q14@

 Solution:

Question 15

@Q15@

 Solution: