



III 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

$$z^n = 1$$

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

$$@graph_i{nequality@}$$

Describe the above locus in the complex plane.

 Solution:

Question 4

Solve the following equation for z :

$$e^{\alpha z} = \beta$$

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

@Q10@

 Solution:

?

Question 11

@Q11@

 Solution:

?

Question 12

@Q12@

 Solution:

?

Question 13

@Q13@

 Solution:

?

Question 14

@Q14@

 Solution:

?

Question 15

@Q15@

 Solution: