
Assignment 1

MA06 Complex Analysis

Deadline: 17:00, Thursday, Dec 14, 2023

1. Write the given number in the form $a + ib$, where $a, b \in \mathbf{R}$. Find $\operatorname{Re}(z)$ and $\operatorname{Im}(z)$.

(a) $z = (5 - 9i) + (2 - 4i)$

(b) $z = (2 - 3i)(4 + i)$

(c) $z = 3i + \frac{1}{2-i}$

(d) $z = \frac{i}{1+i}$

2. Let $z_1 = a_1 + ib_1, z_2 = a_2 + ib_2, z = a + ib \in \mathbf{C}$. Verify that

(a) $\overline{z_1 - z_2} = \overline{z_1} - \overline{z_2}$

(b) $\overline{z_1 z_2} = \overline{z_1} \overline{z_2}$

(c) $|\overline{z}| = |z|$

3. Find the polar form of the complex number $z = 5 - 5i$.

Notice:

Please write your Email title as "A{Assignment Number}-{Your Student ID}-{Your Name}",
for example, "A1-s12xxxxx-Taro Aizu",

and submit your homework to ma06.complex.analysis@gmail.com