MA 412 COMPLEX ANALYSIS


Ex. 1: Verify the remaining properties of addition and multiplication in the complex plane, that is (P1), ..., (P9).

Ex. 2: Verify Thm I.4.

Section 1.2: 1,2,3 5,6,7,9,10.

Ex. 3: Verify relations I (8), (9), (10), (11) and (12) for the absolute value.

Section 1.3: 1,2,5,9,10,16,18,20.

Section 1.4: 1,3,5,7,10.

Ex. 4: Verify formula (2) in Thm. I.10 (powers of Complex Numbers).

Ex. 5: Use De Moivre’s formula to derive the identities for cos(3θ) and sin(3θ).

Ex. 6: Derive the usual quadratic formula for quadratic equations $az^2 + bz + c = 0$, $a \neq 0$, with complex coefficients. (Hint: rewrite equation as $z^2 + (b/a)z + (c/a)z = 0$, and complete a perfect square.)

Section 1.5: 1,2,4,5,9,13.

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