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Tutorial group number:

Programme of study:

University of Leeds, School of Mathematics

MATH1050

Quiz 4

(Dated: Monday, 1 December 2008)

1. Provide the definition of a complex number.
2. Given the following complex numbers $z_1 = (1, -1)$ and $z_2 = (1, 1)$, compute
 - (a) $z_1 + z_2$,
 - (b) $z_1 \cdot z_2$,
 - (c) z_2^2 ,
 - (d) $|z_1|$,
 - (e) \bar{z}_2 .
3. Find the two square roots of i .
4. Find all solutions of the equation

$$x^4 + 1 = 0.$$

5. Find $\cos 3\theta$ in terms of $\sin \theta$ and $\cos \theta$.