

Math 4213 - Complex Analysis

Quiz #1 - 2012.01.13

Solutions

1. State the *Triangle Inequality* for complex numbers.

Given complex numbers z_1 and z_2 , the following inequality always holds:

$$|z_1 + z_2| \leq |z_1| + |z_2|$$

2. Explain what the *argument* of a complex number is, and how it is computed.

The argument of a complex number is the angle θ found by expressing a complex number $z = x + iy$ as a vector and computing the angle between the vector and the x -axis. Similarly, if we express $z = r(\cos(\theta) + i \sin(\theta))$, where $\theta \in (-\pi, \pi]$, θ is once again the argument.