Agenda for Monday, September 24, 2007

- The Argand Diagram
- Geometrical Properties of Complex Numbers
  - The modulus of z
    - Properties of the modulus function
  - The argument of z
    - Properties of the argument function
- Questions from 11.1 Complex Numbers HW
- HW 11.2 on calendar
- Tuesday: solutions 11.2 and work on portfolio

11.2 Geometrical Representation of Complex Numbers 2/8

Any complex number $z=x+iy$ can be respresented on an Argand Diagram by using the point $P(x,y)$ or the position vector $\overrightarrow{OP}$.

The **modulus** of a complex number $z=x+iy$ is a measure of the length of $z=x+iy$ from the origin and is denoted $|z|$.

The modulus is also known as the **magnitude**.

If $z=x+iy$, then $|z|=\text{mod}(z)=$

The argument of a complex number $z=x+iy$ is a measure of the angle which $z=x+iy$ makes with the positive Re(z) axis. If θ is this angle, then we write $\theta=\arg(z)$.

If $-\pi<\theta\leq\pi$, then $\theta=Arg(z)$ refers to the **Principal argument value** which has a restricted range for θ.

If $z=-1+2i$, find mod(z) and Arg(z).

Properties of the modulus function (p. 397):

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Properties of the argument function (p. 397):

11.2 Geometric Rep. of Complex Numbers

HW: p. 400 #2, 3afgh, 5, 7, 8, 10, 11, 16, 20