Core Pure 1

Argand diagrams

Chapter Overview

1: Represent complex numbers on an Argand Diagram.

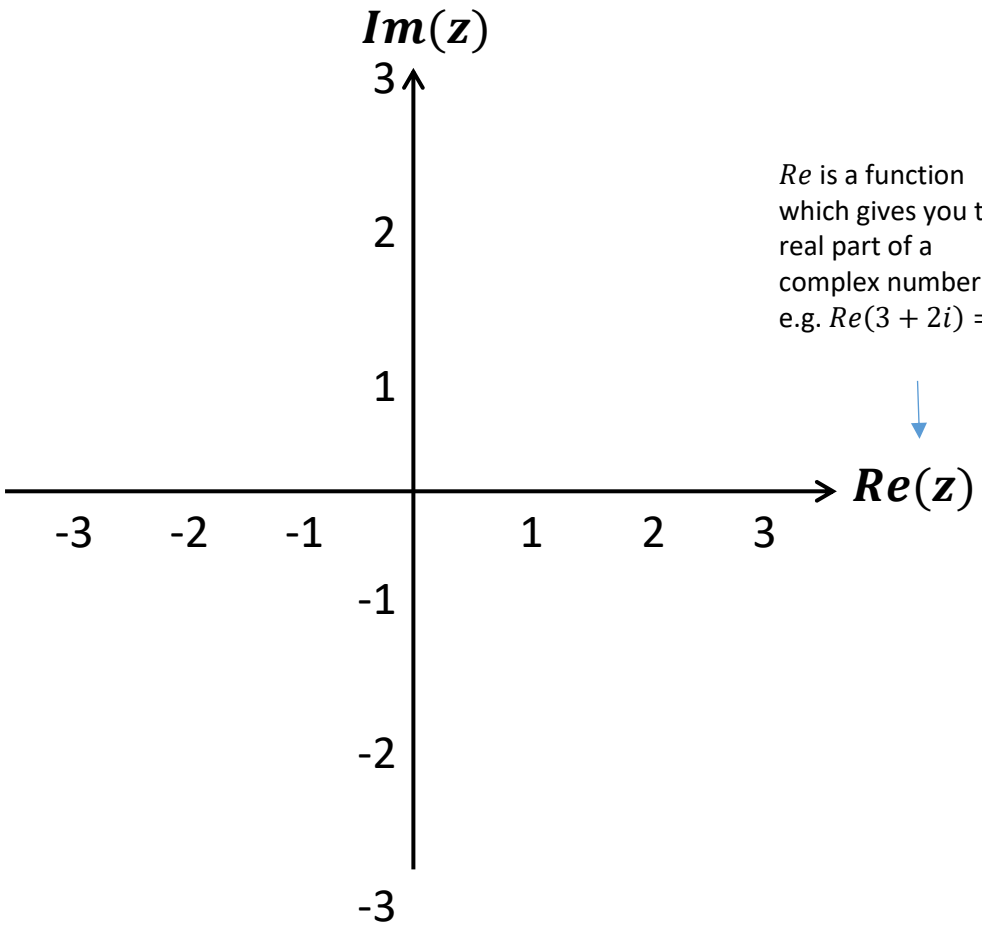
2: Put a complex number in modulus-argument form.

3: Identify loci and regions.

Topics	What students need to learn:		
	Content		Guidance
2 Complex numbers *continued*	2.4	Use and interpret Argand diagrams.	Students should be able to represent the sum or difference of two complex numbers on an Argand diagram.
	2.5	Convert between the Cartesian form and the modulus-argument form of a complex number. Knowledge of radians is assumed.	
	2.6	Multiply and divide complex numbers in modulus argument form. Knowledge of radians and compound angle formulae is assumed.	Knowledge of the results, $\lvert z_1 z_2 \rvert = \lvert z_1 \rvert \lvert z_2 \rvert$, $\left\lvert \frac{z_1}{z_2} \right\rvert = \frac{\lvert z_1 \rvert}{\lvert z_2 \rvert}$ $\arg(z_1 z_2) = \arg z_1 + \arg z_2$ $\arg\left(\frac{z_1}{z_2}\right) = \arg z_1 - \arg z_2$
	2.7	Construct and interpret simple loci in the argand diagram such as $\lvert z-a \rvert > r$ and $\arg(z-a) = \theta$ Knowledge of radians is assumed.	To include loci such as $\lvert z-a \rvert = b$, $\lvert z-a \rvert = \lvert z-b \rvert$, $\arg(z-a) = \beta$, and regions such as $\lvert z-a \rvert \leqslant \lvert z-b \rvert$, $\lvert z-a \rvert \leqslant b$, $\alpha < \arg(z-a) < \beta$

Argand diagrams

Just as x-y axes were a useful way to visualise coordinates, an Argand diagram allows us to visualise complex numbers.



Re is a function which gives you the real part of a complex number.
e.g. $Re(3 + 2i) = 3$.