

# OCR Further Pure 1

## Complex Numbers

### Section 2: Equations and geometrical representation

#### Crucial points

- 1. Make sure that you can plot complex numbers correctly on the Argand diagram**  
Remember in particular that the points  $z$  and  $z^*$  are reflections of each other in the  $x$  axis, and that the points  $z$  and  $-z$  are rotations of each other through  $180^\circ$  about the origin.
- 2. Make sure that you know how addition and subtraction of complex numbers is shown in the Argand diagram, using vectors**  
You need to understand that a complex number can be represented not only by a point in the Argand diagram, but alternatively by a vector.
- 3. Remember that complex roots of polynomial equations with real coefficients always occur in conjugate pairs**  
This is important when solving polynomial equations. If you know one complex root, then you know a second complex root (its conjugate) and you can then find a quadratic factor with real coefficients for the equation.
- 4. Make sure that you can divide a polynomial by a linear or quadratic factor**  
If you find this difficult, there are two PowerPoint presentations in this section which demonstrate factorisation of polynomials by inspection or algebraic long division.
- 5. Check your work carefully**  
It is easy to make mistakes in the algebra when solving polynomial equations.