Apply Complex Numbers in Solving Problems

Achieved	Merit	Excellence
Apply the algebra of complex numbers in solving problems.	Apply the algebra of complex numbers, using relational thinking, in solving problems.	Apply the algebra of complex numbers, using extended abstract thinking, in solving problems.
Relational Thinking - Involves selecting and carrying out a logical sequence of steps, connecting different concepts or representations, demonstrating understanding of concepts, and relating findings to a context.		
Extended Abstract Thinking - Involves devising a strategy, identifying relevant concepts, developing logical reasoning, forming generalizations, and communicating mathematical insight.		

Complex Numbers Methods

The methods included in this standard are related to:

- ☐ Quadratic and cubic equations with complex roots
- ☐ Argand diagrams
- ☐ Polar and rectangular forms
- ☐ Manipulation of surds
- ☐ Manipulation of complex numbers
- ☐ Loci
- ☐ De Moivre's theorem
- ☐ Equations of the form $z^n = r\,\mathrm{cis}\,\theta$, or $z^n = a + bi$ where a, b are real and n is a positive integer

Problems

Situations set in real-life or mathematical contexts that provide opportunities to apply knowledge or understanding of the methods above.

Key Vocabulary

Students are expected to understand and use terms related to complex number methods, such as:

- ☐ Complex number
- ☐ Real part
- ☐ Imaginary part
- ☐ Modulus
- ☐ Argument
- ☐ Polar form
- ☐ Rectangular form
- ☐ Conjugate
- ☐ Loci
- ☐ Root
- ☐ Argand diagram
- ☐ De Moivre's theorem