

Liceo Scientifico Statale M.Grigoletti, Pordenone
Modulo CLIL sui Numeri Complessi
Consolidation exercises - Lesson 6

Luciano Battaia - Mariateresa Esposito

1. Find the polar form of the number $-2 - 2\sqrt{3}i$
2. Given the numbers $1 + i$ and $-1 + i$ find the polar forms. Get the product using both the polar and the standard form and compare the results.
3. Given the numbers $-1 + \sqrt{3}i$ and $4\sqrt{3} - 4i$ find the polar forms. Get the product using both the polar and the standard form and compare the results.
4. Given the numbers in item 3, get the quotient using both the polar and the standard form and compare the results.
5. Find the standard form of the numbers $[4, 300^\circ]$ and $[8, 270^\circ]$. Find the product and the quotient of the numbers using both the polar and standard form and compare the results.
6. Calculate the 4-th power of the number $-1 + \sqrt{3}i$, using the polar and the standard form.
7. Simplify the following expression, using the standard or the polar form depending on which is the easiest one: $\frac{1}{(2i)^3} - 5i^5 + (2 + 2i)^4 + ((2 - i)(2 + i))^2$
8. Simplify the following expression, using the standard or the polar form depending on which is the easiest one: $(-1 + i\sqrt{3})^3 + 6i^3 + (1 - 2i)(1 + 2i)$