Algebra 5 – parte 3

Esercizi: modulo

- $-3j$
- -5
- $-\sqrt{3}+j$

immaginari puri

numeri reali

$|-3j| = 3$

$|-5| = 5$

$|-\sqrt{3}+j| = \sqrt{(-\sqrt{3})^2+1^2} = 2$

caso il t. di Pitagora!

possimo passo: trovare l'angolo θ

esercizi:

- $\dfrac{1-j\sqrt{3}}{1+j}$
- $(1+j)(3+2j)$

- $\dfrac{1-j\sqrt{3}}{1+j} = \dfrac{(1-j\sqrt{3})(1-j)}{(1+j)(1-j)} = \dfrac{1-j-j\sqrt{3}-\sqrt{3}}{2} =$

$= \dfrac{-\sqrt{3}+1}{2} + j\dfrac{-\sqrt{3}-1}{2} \rightarrow$ modulo:

$a = \dfrac{-\sqrt{3}+1}{2}$, $b = \dfrac{-\sqrt{3}-1}{2}$

$= \sqrt{\left(\dfrac{-\sqrt{3}+1}{2}\right)^2 + \left(\dfrac{-\sqrt{3}-1}{2}\right)^2} =$

$= \sqrt{\dfrac{3+1-2\sqrt{3}}{4} + \dfrac{3+1+2\sqrt{3}}{4}} = \sqrt{1-\dfrac{1}{2}\sqrt{3}+1+\dfrac{1}{2}\sqrt{3}} = \sqrt{2}$

- $(1+j)(3+2j) = 3+2j^2+3j+2j = 1+5j$

$a = 1$, $b = 5$

modulo: $\sqrt{1^2+5^2} = \sqrt{26}$