5-4 More Complex Numbers

Alg 2 standards 5.0 and 6.0

ex. 1 $-2i(3+i) = -6i - 2i^2 = 2 - 6i$ (-1)

ex. 2 $i(4-7i)^2$

$i(4-7i)(4-7i) = i(16 - 56i + 49i^2)$ (-49)

$= i(-33 - 56i) = -33i - 56i^2$ (-1)

$= 56 - 33i$

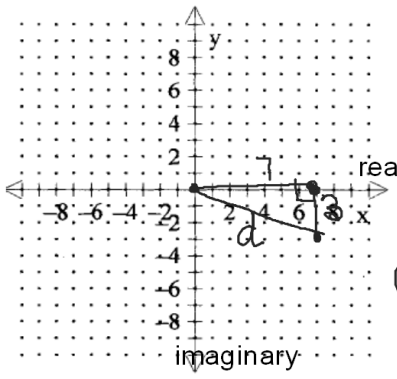
ex. 3 $\dfrac{(4+3i)}{-5i} \cdot \dfrac{i}{i}$

$= \dfrac{4i + 3i^2}{-5i^2} = \dfrac{-3}{5} + \dfrac{4}{5}i$

ex. 4 $\dfrac{(3+i)}{(4-3i)} \cdot \dfrac{(4+3i)}{(4+3i)} = \dfrac{12 + 13i + 3i^2}{16 - 9i^2} = \dfrac{9 + 13i}{25} = \dfrac{9}{25} + \dfrac{13}{25}i$ (-3)

$A-B$ $A+B$ $A^2 - B^2$

ex. 5 **The *absolute value of a complex number* is its distance from the origin in the complex plane.**



$|a + bi| = \sqrt{a^2 + b^2}$

$|7 - 3i| = \sqrt{7^2 + (-3)^2}$

$d = \sqrt{7^2 + 3^2}$

$\sqrt{58}$