Class Discussion

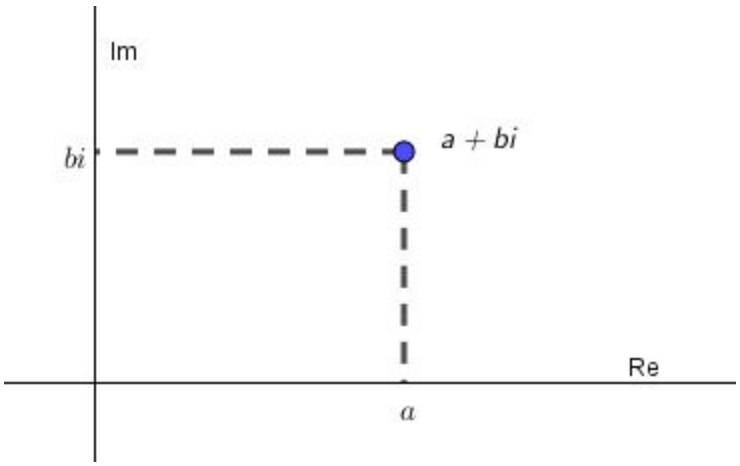
Unit 2 Topic 4 Complex Numbers

Objective: complex plane, arithmetic operations for two complex numbers and the norm of a complex number

Use the following complex numbers to demonstrate

$z_1 = 1 + 2i$, $z_2 = -4 - i$, $z_3 = 2$, $z_4 = -4i$

Complex plane



Ex 0: Locate $z_1 \sim z_4$ in the complex plane

Ex 1: Let x_1 and x_2 be two different real numbers, and z_1 and z_2 be two different complex numbers

Explain why the mathematical statement $x_1 < x_2$ make sense but $z_1 < z_2$ does not.

Ex 2: Evaluate $z_1^{\,2} + \dfrac{z_3}{z_2}$, then write your result in the standard form

Ex3: Let x be a real number, explain what is the meaning of $|x|$? Use the same analogy to understand what possible meaning of $|z|$ can be if z is a complex number?

Ex 3.2 Find $\left|\dfrac{z_2}{z_1}\right|$

Ex 4 (these z1 and z2 are not what are given above) Given $z_1 = a + 2bi, z_2 = b + (4-a)i$ and $z_1 + 2z_2 = 7 + 4i$, find $|z_1 - z_2|$