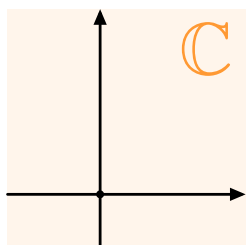


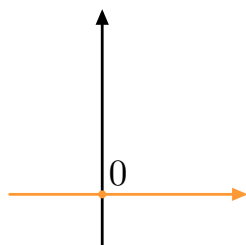
COMPLEX NUMBERS

i

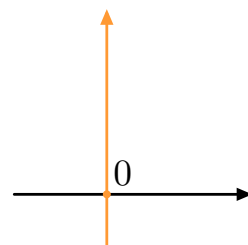
Imaginary unit



Complex plane,
Complex numbers

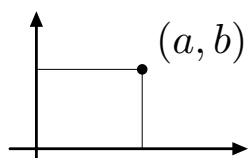


Real axis



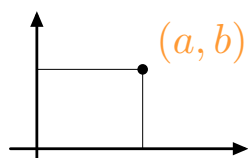
Imaginary axis [purely
imaginary numbers]

$$z = a + bi$$



Real part,
Imaginary part

$$z = a + bi$$



Cartesian coordinates
(rectangular coordinates)

$$z = a + bi$$

$$\bar{z} = a - bi$$

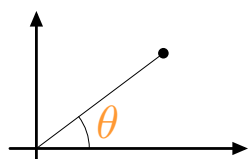
Complex conjugate

$$z = a + bi$$

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

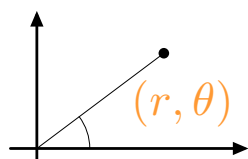
Absolute value
(complex modulus)

$$z = re^{i\theta}$$



Argument

$$z = re^{i\theta}$$

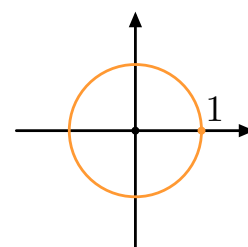


Polar coordinates

e^z

$\log(z)$

Complex exponential,
Complex logarithm



Unit circle

ANALYSIS