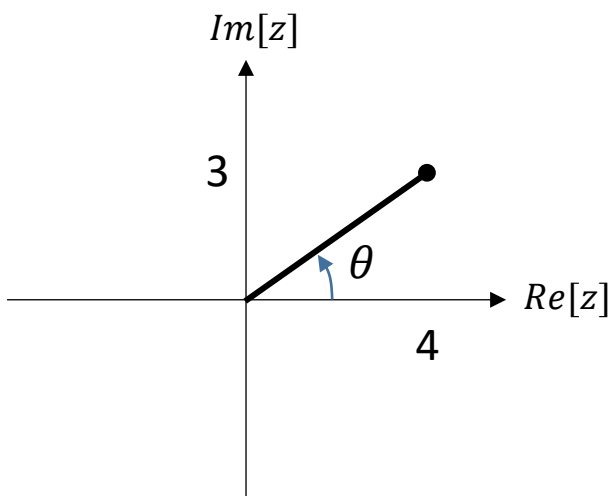


Modulus and argument

$4 + 3i$ is plotted on an Argand diagram.

- What is its distance from the origin?
- What is its anti-clockwise angle from the positive real axis? (in radians)



a)

b)

These are respectively known as the modulus $|z|$ and argument $\arg(z)$ of a complex number.

Examples

Determine the modulus and argument of:

(a) $5 + 12i$

(b) $-1 + i$

(c) $-2i$

(d) $-1 - 3i$

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$$z = 2 - 3i$$

(a) Show that $z^2 = -5 - 12i$. (2)

Find, showing your working,

(b) the value of $|z^2|$, (2)

(c) the value of $\arg(z^2)$, giving your answer in radians to 2 decimal places. (2)

(d) Show z and z^2 on a single Argand diagram. (1)