The Argand diagram

Introduction.

Engineers often find a pictorial representation of complex numbers useful.

Such a representation is known as an **Argand diagram**. This leaflet explains how to draw an Argand diagram.

1. The Argand diagram.

The complex number $z = a + bj$ is plotted as a point with coordinates (a, b) as shown. Because the real part of z is plotted on the horizontal axis we often refer to this as the **real axis**. The imaginary part of z is plotted on the vertical axis and so we refer to this as the **imaginary axis**. Such a diagram is called an **Argand diagram**.
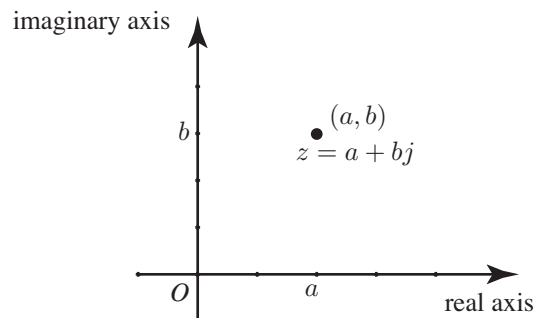
The complex number $z = a + bj$ is plotted as the point with coordinates (a, b).

Example
Plot the complex numbers $2 + 3j$, $-3 + 2j$, $-3 - 2j$, $2 - 5j$, 6, j on an Argand diagram.

Solution
The figure below shows the Argand diagram. Note that purely real numbers lie on the real axis. Purely imaginary numbers lie on the imaginary axis. Note that complex conjugate pairs such as $-3 \pm 2j$ lie symmetrically on opposite sides of the real axis.