 Other representations of complex numbers

Sample derivation of Euler’s formula

Develop Euler’s formula, , using the Taylor series for , and



Students evaluate powers of

Substitute

Using Euler’s formula to link polar and exponential form of complex numbers

Euler’s formula:

Polar form:

Substitute

Multiply by

Summary of complex number formats

**i.e.** in Cartesian, polar and exponential form

where

is the argument of

and

is the modulus of .