

Oral question Potential Theory

Consider the function $f(z) = \ln(2 + 3z)$, in a branch of your choice but such that for $z = 0$ the value is not real.

1. Make a drawing of the complex plane with the relevant elements to describe the function.
2. Write the first two terms of the Taylor series around $z = 1$.
3. Draw the region of convergence of this Taylor series