

**Example A.11.** Determine for what values of  $z$  the function  $f(z) = 1/z$  is analytic.

*Solution.* We can deduce the analyticity properties of  $f$  as follows. First, we observe that  $f$  is a rational function. Then, we recall that a rational function is analytic everywhere except at points where its denominator polynomial becomes zero. Since the denominator polynomial of  $f$  only becomes zero at 0,  $f$  is analytic everywhere except at 0.