



## Why

1

## Definition

A *complex rational function* (or *rational function*, or *fractional function*) in  $\mathbf{C}$  is a function  $f : \mathbf{C} \rightarrow \mathbf{C}$  for which there exists polynomials  $p : \mathbf{C} \rightarrow \mathbf{C}$  and  $q : \mathbf{C} \rightarrow \mathbf{C}$  in  $\mathbf{C}$  so that

$$f(z) = \frac{p(z)}{q(z)},$$

for all  $z \in \mathbf{C}$ . In other words, a rational function is a “quotient” (see Complex Products) of two polynomials in  $\mathbf{C}$ .

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<sup>1</sup>Future editions will include.



