

Answer on Question #58323 – Math – Complex Analysis

An analytic function is smooth if it is?

Solution:

A function is analytic, by definition, if and only if its Taylor series about some point converges to the function in some neighborhood for every point in its domain.

Any complex analytic function is smooth (or infinitely differentiable, C^∞) because it is complex differentiable in a neighborhood of every point in its domain. It is known as major theorem in complex analysis.

Answer: An analytic function is smooth if it is holomorphic function. Holomorphic function is a complex-valued function that is complex differentiable in a neighborhood of every point in its domain.