Chapter 3

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Theorem 3.1 Riemann's theorem on removable singularities:*f hol on* $\Omega - \{z_0\}$*, if f is bounded on* $\Omega - \{z_0\}$*,then* z_0 *is a removable singularity*

Corollary 3.2:*Suppose that f has an isolated singularity at the point* z_0*, Then* z_0 *is a pole* $\iff$ $|f(z) \to \infty|$ *as* $z \to z_0$

Isolated singularities belong to one of three categories:

1.Removable singularities (f bounded near z_0)

2.Pole singularities ($|f(z_0) \to \infty$ *as* $z \to z_0|$)

3.Essential singularities