

Theorem 1 (Residue Theorem). Let f be analytic in the region G except for the isolated singularities a_1, a_2, \dots, a_m . If γ is a closed rectifiable curve in G which does not pass through any of the points a_k and if $\gamma \approx 0$ in G then

$$\operatorname{Res}_{z=a} f(z) = \operatorname{Res}_a f = \frac{1}{2\pi i} \int_C f(z) dz,$$

where $C \subset D \setminus \{a\}$ is a closed line $n(C, a) = 1$ (e. g. a counterclockwise circle loop).

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$$xyz \infty \propto \emptyset y = f(x) \quad \Sigma \int \Pi \quad \Pi \int \Sigma \quad \Sigma_a^b \int_a^b \Pi_a^b \quad \Sigma_a^b \int_a^b \Pi_a^b$$