

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*

$$\frac{1}{2\pi i} \int_{\gamma} f\Big(x^{\mathbf{N} \in \mathbb{C}^{N \times 10}}\Big) = \sum_{k=1}^m n(\gamma; a_k) \operatorname{Res}(f; a_k) \, .$$

Theorem 2 (Maximum modulus). *Let G be a bounded open set in \mathbb{C} and suppose that f is a continuous function on G^- which is analytic in G . Then*

$$\max\{|f(z)|:z\in G^-\}=\max\{|f(z)|:z\in\partial G\}\,.$$

First some large operators both in text: $\iiint_Q f(x,y,z)\,\mathrm{d}x\,\mathrm{d}y\,\mathrm{d}z$ and $\prod_{\gamma\in\Gamma_{\tilde{\mathcal{C}}}}\partial(\tilde{X}_{\gamma})$;
and also on display

$$\iiint\limits_Q f(w,x,y,z)\,\mathrm{d}w\,\mathrm{d}x\,\mathrm{d}y\,\mathrm{d}z\leq \oint_{\partial Q} f'\Big(\max\Big\{\frac{\|w\|}{|w^2+x^2|},\frac{\|z\|}{|y^2+z^2|},\frac{\|w\oplus z\|}{|x\oplus y|}\Big\}\Big)\,.$$