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FIXME: Joku matemaattinen otsikko

Etätehtävä

Jyväskylän aikuisopisto
Laitoshuoltajan ammattitutkinto
Siivouspalvelujen tuottaminen osatutkinto
Koulutustunnus: 56108
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Sisältö

1 Theorems

Theorem 1 (Residue Theorem)**.** *Let* f *be analytic in the region* G *except for the isolated singularities* $a_1, a_2, \ldots, a_m$. *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*

$$\frac{1}{2\pi i}\int_\gamma f = \sum_{k=1}^{m} n(\gamma; a_k) \mathit{Res}(f; a_k).$$

Another nice theorem from complex analysis is

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*

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

2 Radicals

$$\sqrt{x+y} \qquad \sqrt{x^2+y^2} \qquad \sqrt{x_i^2+y_j^2} \qquad \sqrt{\left(\frac{\cos x}{2}\right)} \qquad \sqrt{\left(\frac{\sin x}{2}\right)}$$

$$\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{\sqrt{x+y}}}}}}}$$

3 Over- and underbraces

$$\overbrace{x} \quad \overbrace{x+y} \quad \overbrace{x^2+y^2} \quad \overbrace{x_i^2+y_j^2} \quad \underbrace{x} \quad \underbrace{x+y} \quad \underbrace{x_i+y_j} \quad \underbrace{x_i^2+y_j^2}$$

4 Characterization of the Imaginary Forms

Theorem.
Let $S = \{v_1, v_2, \ldots, v_k\}$ be a *set of vectors* in $\mathbb{R}^n$.

Consider $\mathcal{F}(S) = \sum_{i=1}^{k} \delta(v_i v_j w)\sigma_{i,j}$.

If $\mathcal{F}(S) \leqslant \varepsilon$, then

$$\phi(S, \alpha) = \frac{1}{2\pi i} \int_{-\infty}^{753} \frac{\tilde{W}_n(\gamma) \cos\left(\sqrt{x^2}\right)}{f'(x)R/a} dx = \det \begin{pmatrix} \alpha^2 & \Pi \\ \omega & x \otimes y \end{pmatrix}$$

Note: If $\beta \in \Gamma$, then the form is *undefined* at the points in $S \cap \Gamma$, and the integral $I_l(i_1)$ diverges as $\varepsilon \to 0$. This pathological behavior *can be handled* by taking $\Gamma \subseteq S$.

5 More stuff

ABCDEFGHIJKLMNOPQRSTUVWXYZ $ABCDEFGHIJKLMNOPQRSTUVWXYZ$
$A\Lambda\Delta\nabla BCD\Sigma EF\Gamma GHIJKLMNO\Theta\Omega\mho P\Phi\Pi\Xi QRSTUVWXY\Upsilon\Psi Z$ 1234567890
$a\alpha b\beta c\partial d\delta e\epsilon\varepsilon f\zeta\xi g\gamma h\hbar\hslash\iota i\imath j\jmath k\kappa\varkappa l\ell\lambda mn\eta\theta\vartheta o\sigma\varsigma\phi\varphi\wp p\rho\varrho qrst\tau\pi u\mu\nu v\upsilon w\omega\varpi x\chi y\psi z$
$\infty \propto \emptyset\varnothing d\eth \backepsilon$
$\boldsymbol{\alpha} + \mathbf{b} = 27$