ⓘ Info

This note, that was found here, as a part of a collection
is written (completely with human hands) by Rupadarshi Ray,
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$\exp(z)$

$$\exp(z) := \sum_{n\geq 0} \frac{z^n}{n!}$$

in	exp	log	
$\mathbb{Q}$	formal power series in $\mathbb{Q}[[X]]$ $$\sum_{n\geq 0}\frac{X^n}{n!}$$		$\exp(\log(1-X)) = 1 -$
$\mathrm{Mat}_{\mathbb{Q}}$			
$\mathbb{R}$	$\exp : \mathbb{R} \to \mathbb{R}_{>0}$		
$\mathbb{C}$	$\exp : \mathbb{C} \to \mathbb{C}^*$		
$\mathrm{Mat}_{\mathbb{R}}$			
$\mathrm{Mat}_{\mathbb{C}}$			

on $\mathbb{C}$

$$\frac{\partial}{\partial z}\exp(z) = \exp(z)$$

$$\exp(z_1)\exp(z_2) = \exp(z_1+z_2)$$

$$\begin{aligned}\frac{\partial}{\partial z}\exp(z)\exp(z_1+z_2-z) &= \exp(z)\exp(z_1+z_2-z) - \exp(z)\exp(z_1+z_2-z)\\ &= 0\\ \implies \exp(z)\exp(z_1+z_2-z) &= \exp(0)\exp(z_1+z_2-0)\\ &= \exp(z_1+z_2)\end{aligned}$$

Then evaluate at $z = z_1$

$$\exp(z_1)\exp(z_2) = \exp(z_1+z_2)$$

Current note has 0 direct children and 0 total descendants.

- squishy
  - pow
    - The complex exponential $\exp(z)$

And it has 28 siblings.

- squishy
  - pow
    - Angle function
    - Bessel functions
    - $$\cos\sqrt{z}$$
    - The complex logarithm
    - $\sum_{n\geq 0} z^{n!}$
    - $z^3 - 3z$
    - $$\frac{r_0}{1+\epsilon\cos b\theta}$$
    - $\cos\left(\pi\frac{p}{q}\right)$
    - $\frac{\cos x^k}{x}$
    - Elliptic integrals and Jacobi elliptic functions
    - The complex exponential $\exp(z)$
    - $\exp\left(\frac{z+1}{z-1}\right)$
    - e^{-x^2}
    - [Only sum terms that are multiples of N in $\mathbb{C}[[z](https://rupadarshiray.github.io/notes/YchnxQ9SF1RsuKjBntMv8a.$]]
    - $\int\frac{1}{x^2+bx+c}$
    - $\frac{\exp(z)}{1-z}$
    - $\sin x$
    - $\sin(x\sin(x))$
    - $\frac{\sin x}{x}$
    - stock.sin x by xk
    - $\sin x^2$
    - $\sqrt{z}$
    - $\sqrt{z^2-1}$
    - Theta functions

- Weierstrass elliptic function $\wp$
- Weierstrass' primary factors
- $x^2 \sin \frac{1}{x}$
- $x + x^2 \sin \frac{1}{x}$