

An Example

Someone

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There are many beautiful formulae in Mathematics; some of them are

- $e^{i\pi} + 1 = 0$;
- $\sin^2 \theta + \cos^2 \theta = 1$;
- $\mathcal{L}_X \omega = \iota_X d\omega + d\iota_X \omega, \quad \forall X \in \mathcal{X}(M), \omega \in \Omega^\bullet(M)$;
- $\int_R d\omega = \int_{\partial R} \omega$.

There are also longer formulae which deserve more attention:

$$\frac{d}{dx} \int_{a(x)}^{b(x)} f(t, x) dt = f(b(x))b'(x) - f(a(x))a'(x) + \int_{a(x)}^{b(x)} \frac{\partial f(x, t)}{\partial x} dt,$$

which holds under certain regularity conditions.

Another nice formula for holomorphic functions $f : U \rightarrow \mathbb{C}$:

$$f(a) = \frac{1}{2\pi i} \oint_{\gamma} \frac{f(z)}{z - a} dz.$$

Also Physics has some nice formulae. One is

$$i\hbar \frac{\partial}{\partial t} |\psi(t)\rangle = \hat{H}(t) |\psi(t)\rangle,$$

another is

$$G_{\mu\nu} + \Lambda g_{\mu\nu} = \frac{8\pi G}{c^4} T_{\mu\nu}.$$