MathML example

Formula	Result
Bernoulli Trials	$P(E) = \binom{n}{k} p^k (1-p)^{n-k}$
Cauchy-Schwarz Inequality	$\left(\sum_{k=1}^{n} a_k b_k\right)^2 \leq \left(\sum_{k=1}^{n} a_k^2\right)\left(\sum_{k=1}^{n} b_k^2\right)$
Cauchy Formula	$f(z) \cdot \mathrm{Ind}_\gamma(z) = \frac{1}{2\pi i} \oint_\gamma \frac{f(\xi)}{\xi - z} d\xi$
Cross Product	$\boldsymbol{V}_1 \times \boldsymbol{V}_2 = \begin{vmatrix} \boldsymbol{i} & \boldsymbol{j} & \boldsymbol{k} \\ \frac{\partial X}{\partial u} & \frac{\partial Y}{\partial u} & 0 \\ \frac{\partial X}{\partial v} & \frac{\partial Y}{\partial v} & 0 \end{vmatrix}$
Vandermonde Determinant	$\begin{vmatrix} 1 & 1 & \cdots & 1 \\ v_1 & v_2 & \cdots & v_n \\ v_1^2 & v_2^2 & \cdots & v_n^2 \\ \vdots & \vdots & \ddots & \vdots \\ v_1^{n-1} & v_2^{n-1} & \cdots & v_n^{n-1} \end{vmatrix} = \prod_{1 \leq i < j \leq n} (v_j - v_i)$
Lorenz Equations	$\begin{aligned} \dot{x} &= \sigma(y - x) \\ \dot{y} &= \rho x - y - xz \\ \dot{z} &= -\beta z + xy \end{aligned}$
Maxwell's Equations	$\begin{cases} \nabla \times \overleftarrow{\boldsymbol{B}} - \frac{1}{c}\frac{\partial \overleftarrow{\boldsymbol{E}}}{\partial t} = \frac{4\pi}{c}\overleftarrow{\boldsymbol{j}} \\ \nabla \cdot \overleftarrow{\boldsymbol{E}} = 4\pi\rho \\ \nabla \times \overleftarrow{\boldsymbol{E}} + \frac{1}{c}\frac{\partial \overleftarrow{\boldsymbol{B}}}{\partial t} = \overleftarrow{\boldsymbol{0}} \\ \nabla \cdot \overleftarrow{\boldsymbol{B}} = 0 \end{cases}$
Einstein Field Equations	$\mathrm{R}_{\mu\nu} - \frac{1}{2} g_{\mu\nu} \mathrm{R} = \frac{8\pi \mathrm{G}}{c^4} \mathrm{T}_{\mu\nu}$
Ramanujan Identity	$\frac{1}{(\sqrt{\varphi\sqrt{5}} - \varphi) e^{\frac{25}{\pi}}} = 1 + \frac{e^{-2\pi}}{1 + \frac{e^{-4\pi}}{1 + \frac{e^{-6\pi}}{1 + \frac{e^{-8\pi}}{1 + \ldots}}}}$

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Another Ramanujan identity	$\sum_{k=1}^{\infty} \frac{1}{2^{\lfloor k\cdot\varphi \rfloor}} = \frac{1}{2^0 + \frac{1}{2^1 + \cdots}}$
Rogers-Ramanujan Identity	$1 + \sum_{k=1}^{\infty} \frac{q^{k^2+k}}{(1-q)(1-q^2)\cdots(1-q^k)} = \prod_{j=0}^{\infty} \frac{1}{(1-q^{5j+2})(1-q^{5j+3})}, \quad \text{for } \lvert q \rvert < 1.$