Package mathfont v. 2.4 Example—Roboto

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This is Roboto with Overpass for the radical signs and STIXGeneral for the tensor product. "Testing. Testing." Brown foxes quickly jump over dazzling does and harts. This document shows an example of mathfont in action. Unfortunately, there are many more equations in the world than I have space for here. Nevertheless, I hope I hit some of the highlights. Happy TEXing!

Black-Scholes Equation

$$\frac{\partial V}{\partial t} + \frac{1}{2}\sigma^2 S^2 \frac{\partial^2 V}{\partial S^2} = rV - rS\frac{\partial V}{\partial X}$$

Cardano's Formula/Cubic Formula

$$t_i = \omega_i \sqrt[3]{-\frac{q}{2} + \sqrt{\frac{q^2}{4} + \frac{p^3}{27}}}$$
$$+ \omega_i^2 \sqrt[3]{-\frac{q}{2} - \sqrt{\frac{q^2}{4} + \frac{p^3}{27}}}$$

Einstein's Field Equation (General Relativity)

$$R_{\mu\nu} - \frac{1}{2}Rg_{\mu\nu} + \Lambda g_{\mu\nu} = \frac{8\pi G}{c^4}T_{\mu\nu}$$

First Isomorphism Theorem

$$\varphi(X) \cong X/\ker(\varphi)$$

Gauss-Bonnet Formula

$$\int_M K\, dA + \int_{\partial M} k_g\, ds = 2\pi\chi(M)$$

Maxwell's Equations

$$\nabla \cdot \mathbf{E} = \frac{\rho}{\varepsilon_0} \qquad \nabla \cdot \mathbf{B} = 0$$
$$\nabla \times \mathbf{E} = -\frac{\partial \mathbf{B}}{\partial t} \qquad \nabla \times \mathbf{B} = \mu_0\left(\mathbf{J} + \varepsilon_0 \frac{\partial \mathbf{E}}{\partial t}\right)$$

Michaelis-Menten Model

$$v = \frac{d[P]}{dt} = V\frac{[S]}{K_M + [S]}$$

Navier-Stokes Equation

$$\frac{\partial}{\partial t}(\rho\mathbf{u}) + \nabla \cdot (\rho\mathbf{u} \otimes \mathbf{u}) = -\nabla\bar{p} + \mu\nabla^2\mathbf{u}$$
$$+ \frac{1}{3}\mu\nabla(\nabla \cdot u) + \rho\mathbf{g}$$

Quadratic Formula

$$x = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

Ramanujan's Approximation for Γ

$$\Gamma(1 + x) \approx \sqrt{\pi}\, x^x e^{-x} \sqrt[6]{8x^3 + 4x^2 + x + \frac{1}{30}}$$

Residue Theorem

$$\frac{1}{2i\pi}\int_\gamma f(z)\, dz = \sum_{k=1}^{n} \operatorname{Res}_{a_k}(f)$$

Riemann Zeta Function

$$\zeta(z) = \sum_{i=1}^{\infty} \frac{1}{z^i} = \frac{1}{\Gamma(z)}\int_0^{\infty} \frac{x^{z-1}}{e^x - 1}\, dx$$
$$= 2^z \pi^{z-1} \sin\left(\frac{\pi z}{2}\right)\Gamma(1 - z)\,\zeta(1 - z)$$

Schrodinger Equation

$$i\hbar\frac{d}{dt}|\Psi(t)\rangle = \hat{H}|\Psi(t)\rangle$$

Lorentz Transformation (Special Relativity)

$$t' = \left(t - \frac{vx}{c^2}\right)\frac{1}{\sqrt{1 - \frac{v^2}{c^2}}}$$