Math Test Page

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Abstract

This the Nested Math Test Page.

This example shows equations written in Latex. Those equations are original from the MathJax example file and were adapted for the Nested.

This document requires the MathJax library for proper visualization on the HTML target, so make sure on the document properties that `mathjax` is included in the libraries of this document (by default it is).

This document requires the amsmath package for proper visualization on the LaTeX/PDF target, so make sure `\usepackage{amsmath}` is included in the LaTeX header of this document if you want to use that target (by default it is).

The MathJax is a free Software Javascript library for rendering math on browsers, for more information visit:

http://www.mathjax.org/

The Nested is a specialized editor for creating structured documents of many kinds and formats. For more information visit:

http://nestededitor.sourceforge.net/

0.1 The Lorenz Equations

$$\dot{x} = \sigma(y - x) \tag{1}$$
$$\dot{y} = \rho x - y - xz \tag{2}$$
$$\dot{z} = -\beta z + xy \tag{3}$$

0.2 The Cauchy-Schwarz Inequality

$$\left(\sum_{k=1}^{n} a_k b_k \right)^2 \le \left(\sum_{k=1}^{n} a_k^2 \right) \left(\sum_{k=1}^{n} b_k^2 \right)$$

0.3 A Cross Product Formula

$$\mathbf{V}_1 \times \mathbf{V}_2 = \begin{vmatrix} \mathbf{i} & \mathbf{j} & \mathbf{k} \\ \frac{\partial X}{\partial u} & \frac{\partial Y}{\partial u} & 0 \\ \frac{\partial X}{\partial v} & \frac{\partial Y}{\partial v} & 0 \end{vmatrix}$$

0.4 The probability of getting k heads when flipping n

$$P(E) = \binom{n}{k} p^k (1-p)^{n-k}$$

0.5 An Identity of Ramanujan

$$\frac{1}{(\sqrt{\phi\sqrt{5}} - \phi)e^{\frac{2}{5}\pi}} = 1 + \frac{e^{-2\pi}}{1 + \frac{e^{-4\pi}}{1 + \frac{e^{-6\pi}}{1 + \frac{e^{-8\pi}}{1 + \ldots}}}}$$

0.6 A Rogers-Ramanujan Identity

$$1 + \frac{q^2}{(1-q)} + \frac{q^6}{(1-q)(1-q^2)} + \cdots = \prod_{j=0}^{\infty} \frac{1}{(1-q^{5j+2})(1-q^{5j+3})}, \qquad \text{for } |q| < 1.$$

0.7 Maxwell's Equations

$$\nabla \times \vec{\mathbf{B}} - \frac{1}{c}\frac{\partial \vec{\mathbf{E}}}{\partial t} = \frac{4\pi}{c}\vec{\mathbf{j}} \tag{4}$$

$$\nabla \cdot \vec{\mathbf{E}} = 4\pi\rho \tag{5}$$

$$\nabla \times \vec{\mathbf{E}} + \frac{1}{c}\frac{\partial \vec{\mathbf{B}}}{\partial t} = \vec{\mathbf{0}} \tag{6}$$

$$\nabla \cdot \vec{\mathbf{B}} = 0 \tag{7}$$

0.8 In-line Mathematics

Finally, while display equations look good for a page of samples, the ability to mix math and text in a paragraph is also important. This expression \(\sqrt{3x-1}+(1+x)^2\) is an example of an inline equation. As you see, MathJax equations can be used this way as well, without unduly disturbing the spacing between lines.