

A sentence with inline mathematics: $y = mx + c$.
 A second sentence with inline mathematics: $5^2 = 3^2 + 4^2$.
 A second paragraph containing display math.

$$y = mx + c$$

See how the paragraph continues after the display.

Superscripts a^b and subscripts a_b .
 Some mathematics: $y = 2 \sin^2 \theta^2$.
 A paragraph about a larger equation

$$\int_{-\infty}^{+\infty} e^{-x^2} dx$$

A paragraph about a larger equation (with new operator definition)

$$\int_{-\infty}^{+\infty} e^{-x^2} dx$$

A paragraph about a larger equation

$$(1) \int_{-\infty}^{+\infty} e^{-x^2} dx$$

Solve the following recurrence for $n, k \geq 0$:

$$Q_{n,0} = 1 \quad Q_{0,k} = [k = 0];$$

$$Q_{n,k} = Q_{n-1,k} + Q_{n-1,k-1} + \binom{n}{k}, \quad \text{for } n, k > 0.$$

AMS matrices.

$$\begin{matrix} a & b & c \\ d & e & f \end{matrix} \quad \begin{pmatrix} a & b & c \\ d & e & f \end{pmatrix} \quad \begin{bmatrix} a & b & c \\ d & e & f \end{bmatrix}$$

The matrix **M** (for comparison *M*).

bad use *size* \neq *size* \neq *size*

bad use *size* \neq *size* \neq *size*

Gather

$$(2) \quad P(x) = ax^5 + bx^4 + cx^3 + dx^2 + ex + f$$

$$(3) \quad x^2 + x = 10$$

Multline

$$\begin{aligned} & (a + b + c + d)x^5 + (b + c + d + e)x^4 + \\ & + (c + d + e + f)x^3 + (d + e + f + a)x^2 + (e + f + a + b)x + \\ & + (f + a + b + c) \end{aligned}$$

Aligned equations

$$\begin{array}{lll} a = b + 1 & c = d + 2 & e = f + 3 \\ r = s^2 & t = u^3 & v = w^4 \end{array}$$

- $a = b$
 $c = d$

- $a = b$
 $c = d$

Some "bold" math $(x + y)(x - y) = x^2 - y^2$
 $(x + y)(x - y) = x^2 - y^2$ πr^2
 $(x + \mathbf{y})(x - \mathbf{y}) = x^2 - \mathbf{y}^2$
 r^2 - not successful use.

With bm packet

$$(x + \mathbf{y})(x - \mathbf{y}) = x^2 - \mathbf{y}^2$$

$$(x + \mathbf{y})(x - \mathbf{y}) = x^2 - \mathbf{y}^2$$

$$\alpha + \alpha < \beta + \beta$$

mathtolls alignment

$$\begin{pmatrix} 10000 & 11 \\ 1 & 2 \\ -5 & -6 \end{pmatrix}$$

One two three

$$\log \alpha + \log \beta = \log(\alpha \beta)$$

Unicode Math Alphanumerics

$$A + \mathfrak{A} + \mathbf{A} + \mathcal{A} + \mathbb{A}$$

See (4)

$$(4) \quad \gamma + \delta_{\mathfrak{D}}^\varepsilon = \mathbb{D}\mathbb{E}_\omega$$