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.

Number without math 2y+10x.

Superscripts a^b and subscripts a_b.

Some mathematics: $y = 2 \sin \theta^2$.

A paragraph about a larger equation

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

A paragraph about a larger equation with diff

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

A paragraph about a larger equation with numberedequation

$$\int_{-\infty}^{+\infty} e^{-x^2} \, dx \tag{1}$$

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.

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

Fonts in math mode: The matrix $\mathbf{M}$. The matrix M.

bad use $size \neq size \neq \text{size}$

bad use $size \neq size \neq \text{size}$

Gather

$$P(x) = ax^5 + bx^4 + cx^3 + dx^2 + ex + f \tag{2}$$
$$x^2 + x = 10 \tag{3}$$

Multline

$$(a + b + c + d)x^5 + (b + c + d + e)x^4$$
$$+ (c + d + e + f)x^3 + (d + e + f + a)x^2 + (e + f + a + b)x$$
$$+ (f + a + b + c)$$

Aligned equations

$$a = b + 1 \qquad c = d + 2 \qquad e = f + 3$$
$$r = s^2 \qquad t = u^3 \qquad v = w^4$$

- $a = b$
  $c = d$

- $a = b$
  $c = d$

$(x + y)(x - y) = x^2 - y^2$
$\boldsymbol{(x + y)(x - y) = x^2 - y^2 \ \pi r^2}$
$(x + \mathbf{y})(x - \mathbf{y}) = x^2 - \mathbf{y}^2$
πr^2
$(x + \mathbf{y})(x - \mathbf{y}) = x^2 - \mathbf{y}^2$
$(x + \boldsymbol{y})(x - \boldsymbol{y}) = x^2 - \boldsymbol{y}^2$
$\alpha + \boldsymbol{\alpha} < \beta + \boldsymbol{\beta}$

$$\begin{pmatrix} 10 & 11 \\ 1 & 2 \\ -5 & -6 \end{pmatrix}$$