# 1 Inline and Display mode

A sentence with inline mathematics: $y = mx + c$.

A second sentence with inline mathematics: $(a+b)^2 = a^2 + 2ab + b^2$

A second paragraph containing display math.

$$y = \sin\alpha + \cos\beta$$

# 2 Superscripts and Subscripts

Showcasing superscripts and subscripts in LaTeX:

$y_{i+1} = y_i + hf(x_i, y_i)$

$x = y^2$

# 3 Display Mode

Display mode is particularly useful for larger equations such as integrations.

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