

Use the *sample* document class to typeset the following mathematics using the *align* command:

$$a^2 + b^2 = c^2 \tag{1}$$

$$a_{k+1} = 3a_k - 2 \tag{2}$$

$$\sum_{n=0}^{\infty} \left(\frac{9}{10}\right)^n = 10 \tag{3}$$

$$f(x) = \frac{1}{x^2 + 1} \tag{4}$$

$$f'(x) = \frac{d}{dx} \left[\frac{1}{x^2 + 1} \right] = -\frac{2x}{(x^2 + 1)^2} \tag{5}$$

$$f^2(x) = \left[\frac{1}{x^2 + 1} \right]^2 \tag{6}$$

$$h(x) = \sqrt{4-x} + \sqrt{x^2-1} \tag{7}$$

$$\sqrt{h(x)} = \sqrt{\sqrt{4-x} + \sqrt{x^2-1}} \tag{8}$$

$$(f \circ h)(x) = f(h(x)) \tag{9}$$

$$f(h(x)) = f\left(\sqrt{4-x} + \sqrt{x^2-1}\right) \tag{10}$$

$$(1-x)^2 \leq 10 - 2x \tag{11}$$

$$\log_x 64 = 3 \tag{12}$$

$$-2 + 2 \ln 3x = 17 \tag{13}$$

$$\log_3(2x+1) + \log_3(2x-1) = 1 \tag{14}$$

$$(x+1)^2 + (y-4)^2 = 52 \tag{15}$$

$$x^2 + y^2 + 2x - 8y - 35 = 0 \tag{16}$$

$$\sin^2 \theta = \frac{\sec^2 \theta - 1}{\sec^2 \theta} \tag{17}$$

$$\lim_{h \rightarrow 0} \frac{f(2+h) - f(2)}{h} = f'(2) \tag{18}$$

$$2 \cos^2 x + 3 \sin x - 3 = 0 \tag{19}$$

$$\frac{2x}{\sqrt{4-x}} = 3\sqrt{4-x} \tag{20}$$

$$|14-x| - 3 < 17 \tag{21}$$

$$\frac{2x^3 - 5x^2 - 4x + 3}{x+1} = 2x^2 - 7x + 3, \quad x \neq -1 \tag{22}$$

$$\int \sin^2 x \, dx = \int 1 - \cos^2 x \, dx \tag{23}$$

$$\int_{-\infty}^{\infty} \frac{1}{\sqrt{\pi}} e^{-y^2} \, dy = 1 \tag{24}$$