

Taller 22

$$x = 0, 1, 2, 3, 4$$

$$f(x) = 0.5, 0.1, 1, 2.1, 2.4$$

Grado 1

$$x_0 = 2$$

$$f_1(x) = \frac{x-3}{2-3} \cdot 1 + \frac{x-2}{3-2} \cdot 2.1 = 1.1x - 1.2$$

$$x_1 = 3$$

$$f_1(2.5) = 1.1(2.5) - 1.2 = 1.55$$

$$f(x_0) = 1$$

$$f(x_1) = 2.1$$

Grado 2

$$x_0 = 1$$

$$x_1 = 2$$

$$x_2 = 3$$

$$f_2(x) = \frac{(x-2)(x-3)}{(1-2)(1-3)} \cdot 0.1 + \frac{(x-1)(x-3)}{(2-1)(2-3)} \cdot 1 + \frac{(x-1)(x-2)}{(3-1)(3-2)} \cdot 2.1$$

$$f(x_0) = 0.1$$

$$f(x_1) = 1$$

$$f(x_2) = 2.1$$

$$f_2(x) = 0.1x^2 + 0.6x - 0.6$$

$$f_2(2.5) = 0.1(2.5)^2 + 0.6(2.5) - 0.6 = 1.525$$

Grado 3

$$x_0 = 0$$

$$x_1 = 1$$

$$x_2 = 2$$

$$x_3 = 3$$

$$f_3(2.5) = \frac{(2.5-1)(2.5-2)(2.5-3)}{(0-1)(0-2)(0-3)} \cdot 0.5$$

$$+ \frac{(2.5-0)(2.5-2)(2.5-3)}{(1-0)(1-2)(1-3)} \cdot 0.1$$

$$+ \frac{(2.5-0)(2.5-1)(2.5-3)}{(2-0)(2-1)(2-3)} \cdot 1$$

$$+ \frac{(2.5-0)(2.5-1)(2.5-2)}{(3-0)(3-1)(3-2)} \cdot 2.1$$

$$f_3(2.5) = 0.03125 + (0.0125) + 0.9375 + 0.65625$$

$$f_3(2.5) = 1.59375$$