

Taller Manuel Delgado Mantilla

$$f'(x) = 3,3x^2 - 3,2x + 3$$

$$f'(x_0) = 3,3(0,5)^2 - 3,2(0,5) + 3 = 2,225$$

$$f''(x) = 6,6x - 3,2$$

$$f''(x_0) = 6,6(0,5) - 3,2 = 0,1$$

$$f'''(x) = 6,6$$

$$f'''(x_0) = 6,6$$

$$f(x_0) = 1,1(0,5)^3 - 1,6(0,5)^2 + 3(0,5) - 5 = -3,7625$$

$$f(x) = f(x_0) + f'(x_0)(x - x_0) + \frac{f''(x_0)}{2!}(x - x_0)^2 + \frac{f'''(x_0)}{3!}(x - x_0)^3$$

$$x = 0,6$$

$$x - x_0 = 0,6 - 0,5 = 0,1$$

$$f(0,6) = -3,7625 + (2,225)(0,1) + (0,1/2)(0,1)^2 + (6,6/6)(0,1)^3$$

$$f(0,6) = -3,5384$$

2.

$$f(x_0) = 1,6e^{0,4} - 4,2(0,4) + 2,75 = 3,45692$$

$$f'(x) = 1,6e^x - 4,2$$

$$f'(x_0) = 1,6e^{0,4} - 4,2 = -1,81308$$

$$f''(x) = 1,6e^x$$

$$f''(x_0) = 1,6e^{0,4} = 2,38692$$

$$f'''(x) = 1,6e^x$$

$$f'''(x_0) = 1,6e^{0,4} = 2,38692$$

$$x = 0,45$$

$$x - x_0 = 0,45 - 0,4 = 0,05$$

$$f(0,45) = 3,45692 + (-1,81308)(0,05) + (2,38692/2)(0,05)^2 + (2,38692/6)(0,05)^3$$

$$f(0,45) = 3,369299375$$