

Taller 9

Amey Diego Díaz

DD

MM

AA

1)

$$f(x) = 1,1x^3 - 1,6x^2 + 3x - 5$$

$$x = 0,5$$

$$valor\ verdadero = -3,5384$$

$$h = 0,6 - 0,5 = 0,1$$

orden cero

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

$$= -3,5384$$

$$-3,5384$$

$$orden\ 1 = -3,5384 + f'(0,5)(0,1) = -3,5384 + (3,3(0,5) - 3,2(0,5) + 3)(0,1)$$

$$= -3,542$$

$$orden\ 2 = f(0,6) = -3,54 + f''(0,5/2!)(0,1)^2$$

$$= -3,54 + [(6,6(0,5) - 3,2)/2!](0,1)^2$$

$$= -3,5395$$

$$orden\ 3 = f(0,6) = -3,5395 + f'''(0,5)/3!(0,1)^3$$

$$= -3,5395 + (6,6/3!)(0,1)^3$$

$$= -3,5384$$

$$2) f(t) = 1,6e^t - 4,2 \times 12,25$$

$$x_1 = 0,1$$

$$x_{11} = 0,45$$

$$h = 0,05$$

- order 0

$$f(0,45) \hat{=} 1,6e^{(0,45)} - 4,2(0,1) \times 12,25$$

$$f(0,45) = 3,4569$$

- order 1

$$f(0,45) \hat{=} 3,4569 + \frac{(1,6e^t - 4,2) \cdot 0,05}{1!}$$

$$f(0,45) = 3,3662$$

$$f'(t) = 1,6e^t - 4,2$$

- order 2

$$f(0,45) = 3,3662 + \frac{1,6e^t \cdot 0,05}{2!}$$

$$f(0,45) = 3,3692$$

$$f''(t) = 1,6e^t$$

- order 3

$$f(0,45) = 3,3692 + \frac{(1,6e^t)}{3!} \cdot 0,05$$

$$f'''(t) = 1,6e^t$$

$$f(0,45) = 3,3692$$