

Taller 10 Miguel Sonbrago Rueda

a)

$$f(x) = 0,25x^4 - 0,35x^3 + 2,5 \Rightarrow 2,428125$$

$$x=0,5 \quad f'(x) = x^3 - 0,7x \Rightarrow -0,225$$

$$x_{i-1}=0,4 \quad f''(x) = 3x^2 - 0,7 \Rightarrow 0,05$$

$$x_{i-2}=0,3$$

$$x_{i+1}=0,6 \quad f(0,4) = 2,45, f(0,3) = 2,470525$$

$$x_{i+2}=0,7 \quad f(0,6) = 2,4064, f(0,7) = 2,388525$$

1er orden

$$1) \frac{2,4064 - 2,4281}{0,1 - 0,5} = -0,217 \text{ Adecuado}$$

$$2) \frac{2,4281 - 2,4504}{0,1} = 0,219 \text{ Adecuado}$$

$$3) \frac{2,4064 - 2,45}{0,1} = -0,218 \text{ Centrado}$$

2do Orden

$$1) \frac{2,3885 - 2(2,4064) + 2,428125}{(0,1)^2} = 0,3825 \text{ Adecuado}$$

$$2) \frac{2,428125 - 2(2,42) + 2,4504}{(0,1)^2} = -0,215 \text{ Adecuado}$$

$$3) \frac{2,4064 - 2(2,4281) + 2,45}{(0,1)^2} = 0,055 \text{ Centrado}$$



B)

$$x_1 = 0,5$$

$$f(0,5) = 2,428125 \quad f(0,55) = 2,41700$$

$$h = 0,05$$

$$f(0,6) = 2,4064 \quad f(0,45) = 2,4399$$

$$x_{i+1} = 0,55$$

$$f(0,4) = 2,4504$$

$$x_{i+2} = 0,6$$

$$\bullet f''(x_i) = \frac{2,41700 - 2(2,42) + 2,43}{(0,05)^2} = \underline{\underline{0,02}}$$

$$x_{i-1} = 0,45$$

$$x_{i-2} = 0,4$$

$$\bullet f'(x_i) = \frac{2,41700 - 2,4393}{(0,05)^2} = \underline{\underline{-0,233}}$$