11

taller 10

1)

$x_i = 1,1$ $\quad h = 0,1$

$x_{i+1} = 1,2$

$f(x) 0,35x^4 - 0,45x^2 + 4,8$

$x_{i+2} = 1,3$

$x_{i-1} = 1,$

$f'(1,1) = 1,4(1,1)^3 - 0,9(1,1)$

$x_{i-2} = 0,9$

$= 0,873400$

$F(1,2) = 4,67776$ $\quad f(1,1) = 4,767935$

$F(1) = 4,700000$

$f'(1,1) \approx \frac{4,877760 - 4,767935}{0,1} = 1,09865$

$f'(1,1) \approx \frac{4,767935 - 4,700000}{2(0,1)} = 0,67935$

$f'(1,1) \approx \frac{4,877760 - 4,700000}{2(0,1)} = 0,8860$

Segunda

$$f''(1,1) = 4,2(1,1)^2 - 0,9$$

$$= 4,1162$$

$$f(1,3) = 5,039135$$

$$f(0,9) = 4,665135$$

$$f''(1,1) \approx \frac{5,039135 - 2(4,877760) + 4,767925}{0,1^2}$$

$$= 5,135$$

Sesion II

ej

$\tilde{x} = 1 \qquad \Delta\tilde{x} = 0,05$

$$f(x) = e^{-x} - x$$

- hacia atras

$F'(1,1) = \frac{4,767935 - 4,7}{0,1} = 0,67935$

$F''(1,1) = \frac{4,767435 - 9,4 + 4,665135}{0,01} = 3,307$

hacia el centro

$F'(1,1) = \frac{4,877776 - 4,7}{0,2} = 0,8888$

$F''(1,1) = \frac{4,87776 - 9,53587 + 4,7}{0,01} = 4,169$

2.) $F(x) = 0,35x^4 - 9,45x^2 + 4,6$ $x = 1,1$ $h = 0,05$

$x_i = 1,1$ $f(1,1) = 4,767935$ $F'(1,1) = 0,6734$

$x_{i+1} = 1,15$ $F(1,15) = 4,817027188$ $F''(1,1) = 4,152$

$x_{i-1} = 1,05$ $F(1,05) = 4,729302188$

$F'(1,1) = \frac{4,817027188 - 4,793021888}{0,1} = 0,8772514$

$F''(1,1) = \frac{4,8170 - 9,53587 + 4,7293}{0,0025} = 4,163504$

DD MM AA

Rta: tienen valores cercanos al verdadero