

entonces

teniendo en cuenta que

$$D^2 f(x) = \frac{f(x+1) - 2f(x) + f(x-1)}{h^2}$$

$$D^4 f(x) = \frac{f(x+1) - 2f(x) + f(x-1)}{h^2} - 2 \left(\frac{f(x+1) - 2f(x) + f(x-1)}{h^2} \right) + \left(\frac{f(x+1) - 2f(x) + f(x-1)}{h^2} \right)$$

$$D^4 f(x) = f(x+2) - 2f(x+1) + f(x) - 2f(x+1) + 4f(x) - 2f(x-1) + f(x) - 2f(x-1) + f(x-2)$$

$$D^4 f(x) = \frac{f(x+2) - 4f(x+1) + 6f(x) - 4f(x-1) + f(x-2)}{h^4}$$

h^4

h^2

h^4

h^2

h^2

h^2