

## Comprobación Punto 5

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

$$D^2(f''(x)) = D^4 f$$

$$\hookrightarrow \frac{f(x+2h) - 2f(x+h) + f(x)}{h^2} - 2 \left[ \frac{f(x+h) - 2f(x) + f(x-h)}{h^2} \right]$$

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

$$h^2$$

$$f(x+2h) - 2f(x+h) - 2f(x+h) + f(x) + 4f(x) +$$
$$f(x) - 2f(x-h) - 2f(x-h) + f(x-2h)$$

$$h^4$$

$$4f(x)$$

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