

N1 $(x^4 \theta(x))^{(3)} \quad \mathcal{D}'(\mathbb{R})$

$$y = x^4 \theta(x)$$

$$y' = 4x^3 \theta(x) + x \theta'(x) = \theta'(x) = \delta(x) = 4x^3 \theta(x)$$

$$y'' = 4 [3x^2 \theta(x) + \theta' x^3] = 12x^2 \theta(x)$$

$$y''' = 12 (4 - (3-1)) x^4 \theta(x) = 24 x^4 \theta(x)$$
