

1

a $y' = -5$

b $y' = -10x$

c $y' = 3x^2 - 4x + 3$

d $y' = \begin{cases} -2x & \text{si } x < -1 \\ 1 & \text{si } x \geq -1 \end{cases}$

e $y = \frac{2-x}{x^3}$

f $y' = \cos x \cdot \ln x + \frac{\operatorname{sen} x}{x}$

g $y' = e^x(\cos x - \operatorname{sen} x)$

h $y' = 1 + \frac{1}{\sqrt{x}}$

2 Tangente: $y - x_0^3 + x_0^2 = (3x_0^2 - 2x_0)(x - x_0)$. Normal: $y - x_0^3 + x_0^2 = \frac{1}{3x_0^2 - 2x_0}(x - x_0)$

3

a $y' = e^x(x+1)$ $y'' = e^x(x+2)$ $y''' = e^x(x+3)$

b $y' = \frac{-1}{x^2}$ $y'' = \frac{2}{x^3}$ $y''' = \frac{-6}{x^4}$

c $y' = \cos x$ $y'' = -\operatorname{sen} x$ $y''' = -\cos x$

4 Para $x = -1$ la derivada por la izquierda es 3 y por la derecha 1