

More examples

$$y = x^2 + e^x \quad y' = 2x' + e^x = 2x + e^x$$

$$y = \sin(6x) \quad y' = \cos(6x) \cdot 6 \cdot 1 = 6 \cos(6x)$$

$\uparrow$ outer $\uparrow$ inner

$$y = 1.08 x^{2.3} \quad y' = 1.08 \cdot 2.3 \cdot x^{2.3-1} = 2.484 x^{1.3}$$

$$y = 5^x \quad y' = 5^x \cdot \ln 5$$

$$y = 2^{(x^4)} \quad y' = 2^{(x^4)} \cdot \ln 2 \cdot 4 \cdot x^3$$

$\uparrow$ inner $\uparrow$ outer

$$= \ln 2 \cdot x^3 \cdot 2^{x^4}$$

$$y = x \cdot e^x \quad y' = x \cdot e^x + e^x \cdot 1 = x e^x + e^x = e^x (x+1)$$

$$y = 3 \sin x + 2.8 \quad y' = 3 \cos x + 0 = 3 \cos x$$

$$y = 2.9 e^{-1.4t} \quad y' = 2.9 \cdot e^{-1.4t} \cdot -1.4 \cdot 1$$
$$= -4.06 e^{-1.4t}$$

$$y = 3.7 \cos(x-1.5) + 6.1$$

$$y' = 3.7 \cdot -\sin(x-1.5) \cdot 1 + 0$$
$$= -3.7 \sin(x-1.5)$$

