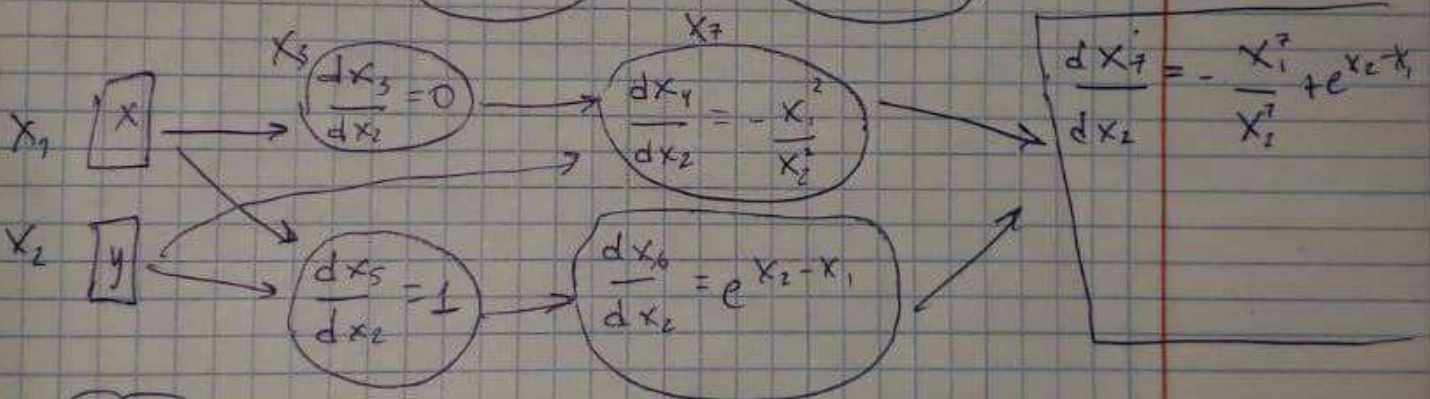
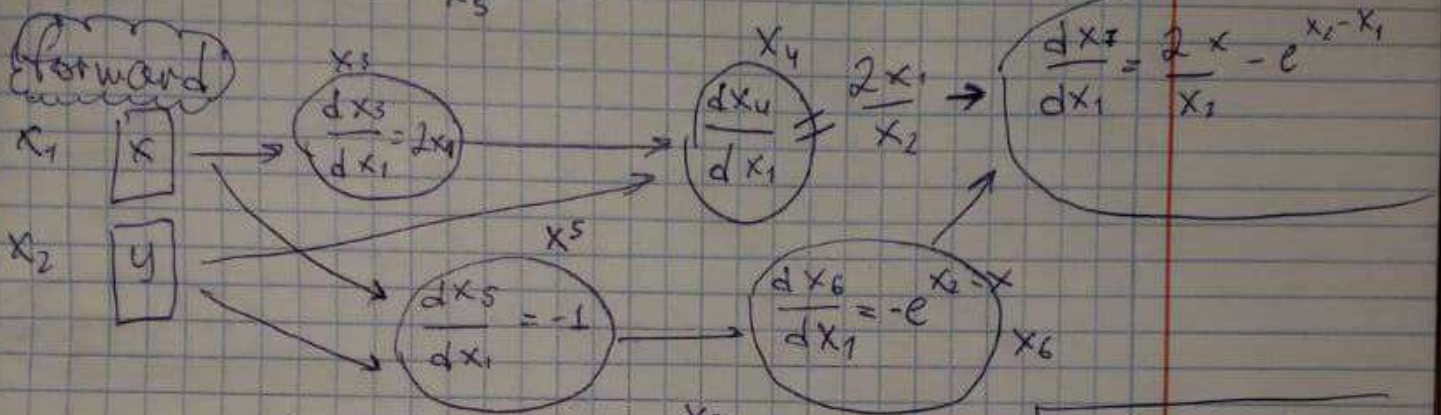
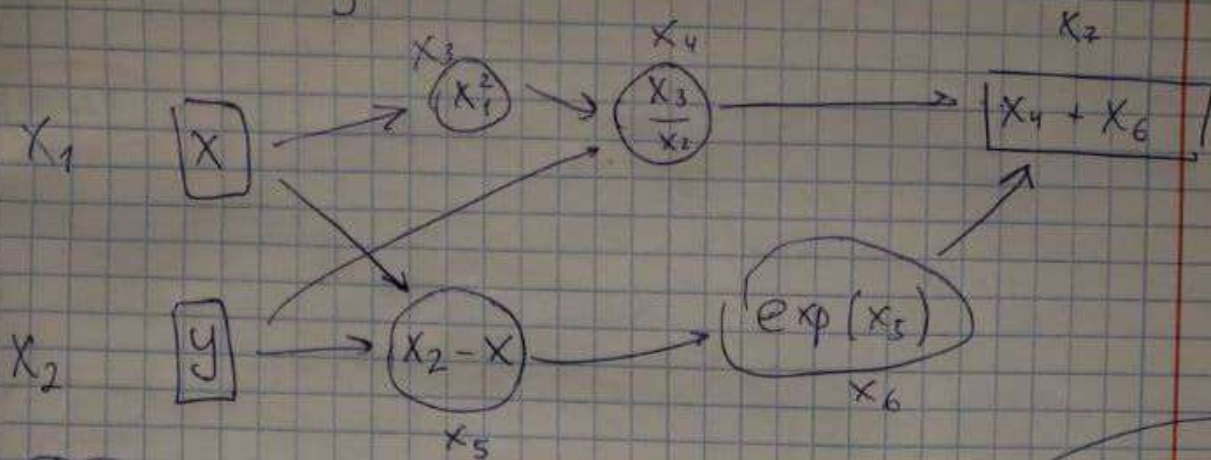
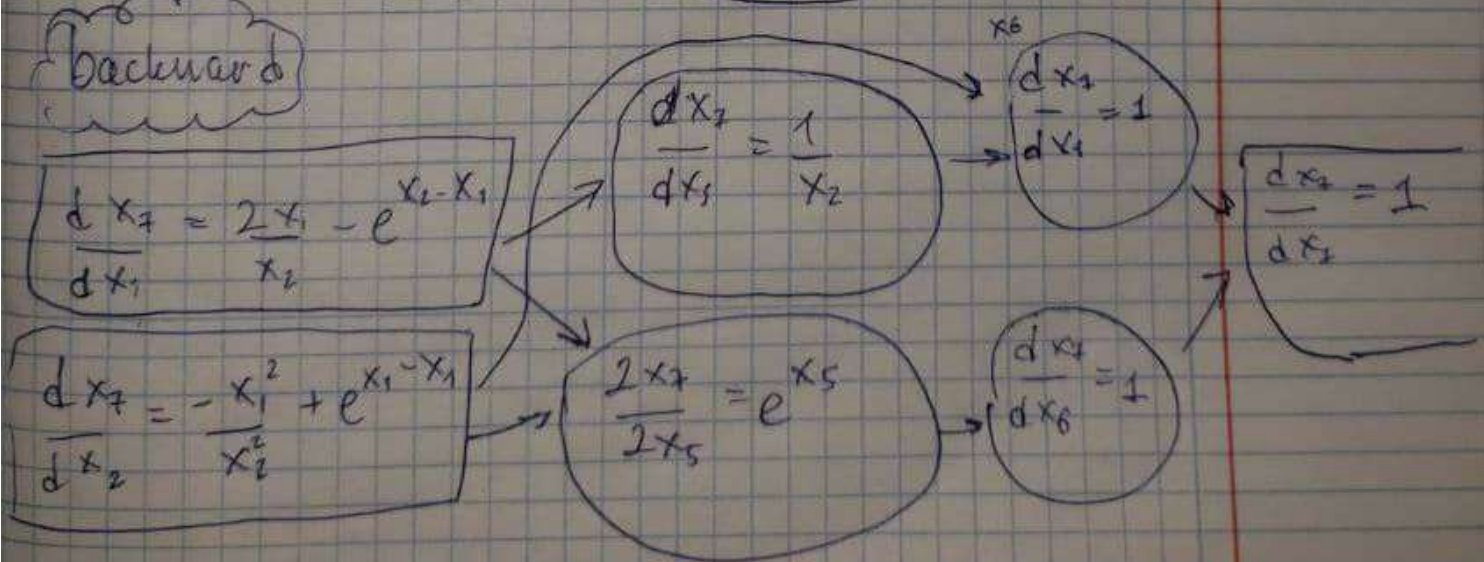


1. Вписать граф вычисления и все произв.

$$f(x, y) = \frac{x^2}{y} + \exp(y - x)$$



Backward



sub $\frac{d(x-y)}{dy} = -1$

$$\frac{d(x-y)}{dx} = 1$$

sum

$$\frac{d(x+y)}{dx} = 1$$

mul

$$\frac{d(x \cdot y)}{dx} = y$$

$$\frac{d(x \cdot y)}{dy} = x$$

$$\frac{d(x+y)}{dy} = 1$$

power

$$\frac{d(x^e)}{dx} = e x^{e-1}$$

Sigmoid

$$\frac{dy}{dx} = y(1-y)$$

$$y = \frac{1}{1+e^{-x}}$$