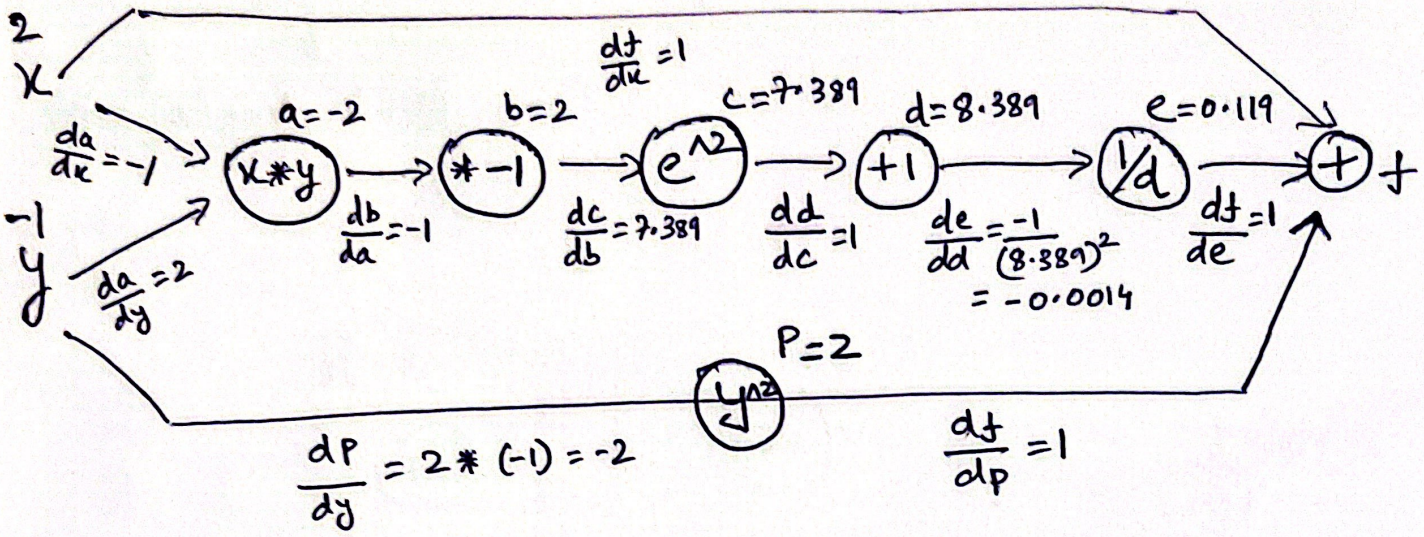
Solution 3:-

Equation $= f = x + \sigma(xy) + y^2$ and $\sigma(q) = \frac{1}{1+e^{-q}}$



$$\frac{df}{dx} = \boxed{1}$$

$$\frac{df}{dy} = \frac{df}{dP} * \frac{dP}{dy} = 1 * -2 = \boxed{-2}$$