

Ex 2f)

$$c_1(x)' = (\sigma(x) - 1) \cdot (\sigma(x) - 1)'$$

$$\begin{aligned} (\sigma(x) - 1)' : (\sigma(x) - 1)' &= \sigma(x) \cdot (1 - \sigma(x)) \cdot (\sigma(x) - 1) \cdot 2 \\ &= 2\sigma(x) \cdot (1 - \sigma(x)) \cdot (\sigma(x) - 1) \end{aligned}$$

$$\begin{aligned} c_1(x)'' &= 2 \cdot \sigma(x)(1 - \sigma(x))(1 - \sigma(x)) \cdot (\sigma(x) - 1) + \\ &(-1) \cdot 2 \cdot \sigma(x) \cdot \sigma(x) \cdot (1 - \sigma(x)) \cdot (\sigma(x) - 1) + \\ &2 \cdot \sigma(x) \cdot (1 - \sigma(x)) \cdot \sigma(x)(1 - \sigma(x)) \end{aligned}$$

Ex 2g)

~~$$\begin{aligned} & -y \log(wx) + (1-y) \cdot \log(wx) \\ & (-y \log(wx))' = -y \cdot \frac{1}{\sigma(wx)} \end{aligned}$$~~