

$$\begin{aligned}\frac{dc}{db} &= 2 \\ \frac{db}{dp} &= 4 \\ \frac{dc}{dp} &= \frac{dc}{db} \cdot \frac{db}{dp} = 8\end{aligned}$$

$$\frac{\partial L}{\partial W_2} = \frac{\partial L}{\partial \sigma(W_2 \times \sigma(W_1 \times X))} \cdot \frac{\partial \sigma(W_2 \times \sigma(W_1 \times X))}{\partial W_2 \times \sigma(W_1 \times X)} \cdot \frac{\partial W_2 \times \sigma(W_1 \times X)}{\partial W_2}$$

$$\begin{aligned}\frac{\partial L}{\partial W_1} &= \frac{\partial L}{\partial \sigma(W_2 \times \sigma(W_1 \times X))} \cdot \frac{\partial \sigma(W_2 \times \sigma(W_1 \times X))}{\partial W_2 \times \sigma(W_1 \times X)} \cdot \frac{\partial W_2 \times \sigma(W_1 \times X)}{\partial \sigma(W_1 \times X)} \\ &\quad \cdot \frac{\partial \sigma(W_1 \times X)}{W_1 \times X} \cdot \frac{\partial W_1 \times X}{\partial W_1}\end{aligned}$$