

$$x \rightarrow x^2 \rightarrow x(x+1) \rightarrow (x(x+1))^2$$

$$\frac{d(x^2+1)^2}{dx} = \frac{d(x^2+1)^2}{d(x^2+1)} \cdot \frac{d(x^2+1)}{dx^2} \cdot \frac{dx^2}{dx}$$

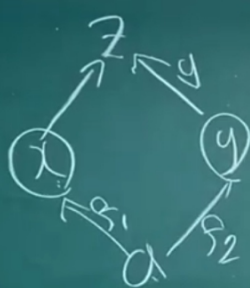
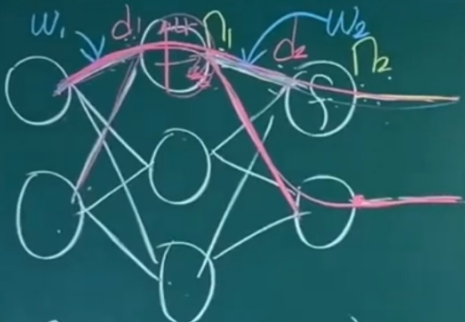
$$= 2(x^2+1) \cdot 1 \cdot 2x$$

$$\frac{\partial L}{\partial w_2} = \frac{\partial L}{\partial n_2} \frac{\partial n_2}{\partial d_2} \frac{\partial d_2}{\partial w_2}$$

$$\frac{\partial L}{\partial w_1} = \frac{\partial L}{\partial n_2} \frac{\partial n_2}{\partial d_2} \frac{\partial d_2}{\partial n_1} \frac{\partial n_1}{\partial d_1} \frac{\partial d_1}{\partial w_1} + \boxed{\phantom{000000}}$$



check한 부분만 따로 그려주세요 됩니다.



$$x = f_1(a), y = f_2(a)$$

$$z = g(x, y)$$

$$\frac{dz}{da} = \lim_{\Delta a \rightarrow 0} \frac{g(x+\Delta x, y+\Delta y) - g(x, y+\Delta y) + g(x, y+\Delta y) - g(x, y)}{\Delta a}$$

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$$= \lim_{\Delta a \rightarrow 0} \left( \frac{g(x+\Delta x, y+\Delta y) - g(x, y+\Delta y)}{f_1(a+\Delta a) - f_1(a)} \right) \times \left( \frac{f_1(a+\Delta a) - f_1(a)}{\Delta a} \right)$$

$$+ \left( \frac{g(x, y+\Delta y) - g(x, y)}{f_2(a+\Delta a) - f_2(a)} \right) \times \left( \frac{f_2(a+\Delta a) - f_2(a)}{\Delta a} \right)$$

$$= \frac{\partial z}{\partial x} \frac{dx}{da} + \frac{\partial z}{\partial y} \frac{dy}{da}$$

