$$y = f(x_1, x_2) = x_1 \cdot x_2 + \sin x_1$$
$$= w_1 \, w_2 + \sin w_1$$
$$= w_3 + w_4$$

W_1 x_1 $\dot{w}_1$ w_4

$\dot{W}_1$

$\dot{w}_4$

W_2 $\dot{w}_3$ w_5 $\dot{w}_5$ f

X_2 W_2 W_3

2·3
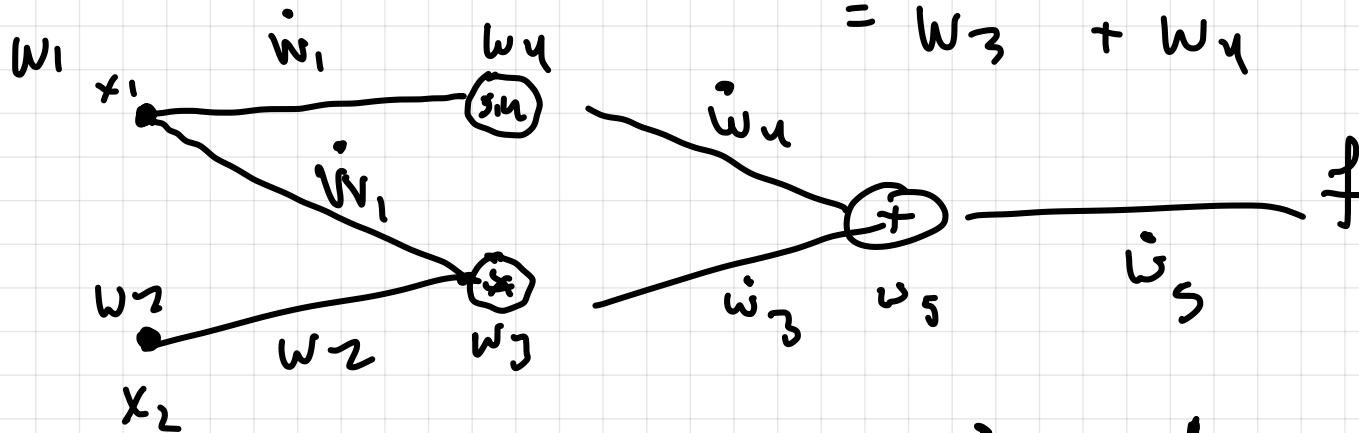
$w_1 = x_1$

$w_2 = x_2$

$w_3 = w_1 * w_2$

$w_4 = \sin w_1$

$v_3 = w_3 + w_4$

$\dot{w}_1 = 1$

$\dot{w}_2 = 0$

$\dot{w}_3 = w_1 \cdot \dot{w}_2 + \dot{w}_1 * w_2$

$\dot{w}_4 = \cos w_1 \cdot \dot{w}_1$

$\dot{w}_5 = 1 \cdot \dot{w}_3 + 1 \cdot \dot{w}_4$

2·0
+ 1·5
= 3

cos2

cos2 + 3

$$y = f(g(h(x)))$$

$$\frac{\partial y}{\partial x} = \frac{\partial f}{\partial g} \cdot \frac{\partial g}{\partial x}$$

$$= \frac{\partial f}{\partial g} \cdot \left(\frac{\partial g}{\partial h} \cdot \frac{\partial h}{\partial x} \right)$$

f

$$\overline{W}_5 = 1 \; (\text{seed})$$

(+) W_5

$$\overline{W}_4 = \overline{W}_5 \cdot \frac{\partial w_5}{\partial w_4}$$
$$= \overline{w}_5$$
$$W_4$$

$$\overline{W}_3 = \overline{W}_5 \frac{\partial w_5}{\partial w_3}$$
$$= \overline{W}_5$$

(sin)   (×) W_3

$$\overline{W}_1^b = \overline{W}_4 \cdot \frac{\partial w_3}{\partial w_1}$$
$$= \overline{W}_4 \cdot W_2$$

$$\overline{W}_1^a = \overline{W}_4 \cdot \frac{\partial w_4}{\partial w_1}$$
$$= \overline{w}_4 \cdot \cos(w_1)$$

$$\overline{W}_2 = \overline{W}_3 \frac{\partial w_3}{\partial w_2}$$
$$= \overline{W}_3 \cdot W_1$$

W_4 X_1 $\boxed{X_2}$ W_2

$$X_1 = \overline{W}_1^a + \overline{W}_2^b$$

$$\overline{X}_2 = \overline{W}_2 = X_1$$

l

$\bar{w}_5 = 1$

$+$