

17A - Q4-2

$$\frac{\partial C}{\partial \theta} = \frac{\partial C}{\partial L_t} \frac{\partial L_t}{\partial \theta}$$

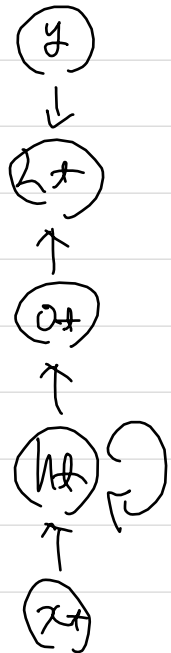
$$= 1 \times \frac{\partial L_t}{\partial \theta}$$

$$= \frac{\partial L_t}{\partial o_t} \frac{\partial o_t}{\partial \theta}$$

$$= \nabla_g L_t \frac{\partial o_t}{\partial \theta}$$

$$= \nabla_g L_t \frac{\partial o_t}{\partial h_t} \frac{\partial h_t}{\partial \theta}$$

$$= \nabla_g L_t \nabla_f g \nabla_h f$$



$$o_t = g(h_t, \theta)$$

$$h_t = f(h_{t-1}, x_t, \theta)$$

$$C = \sum_t L_t$$