

Continued Sections

Part 1 W_7 W_8 $(Z-f) Z(1-Z)$ out b_1

$$\frac{\partial E}{\partial W_7} = .5934 - 0 \cdot .5934 (1 - .5934) \cdot .5841$$

$$.5934 \cdot .24127 \cdot .5841$$

$$= \boxed{-.083613}$$

$$\frac{\partial E}{\partial W_8} = (.7353 - 1) \cdot .7353 (1 - .7353) \cdot .5841$$

$$-.2647 \cdot .7353 \cdot .5841$$

$$= \boxed{-.0301}$$

Part 2 B_{W_4} $(Z-f) Z(1-Z)$

$$\frac{\partial E}{\partial W_4} = (.7353 - 1) \cdot .7353 \cdot (1 - .7353)$$

$$-.2647 \cdot .7353 \cdot .2647$$

$$= \boxed{-.0515}$$

Part 3

$$\frac{\partial E}{\partial W_1} = \left(\sum \delta W_i \right) \text{out } b_1 (1 - \text{out } b_1) \text{out } a_1$$

② $b_1(1 - b_1) = .7020 \cdot (1 - .7020) = \boxed{.2092}$

③

$a_1 = \boxed{.15}$

$$\frac{\partial E}{\partial W_1} = -.0134 \cdot .2092 \cdot .15 = \boxed{-0.000420492}$$

$$\frac{\partial E}{\partial W_2} = \left(\overset{①}{0.437} \right) \cdot \underset{②}{.2429} \cdot \overset{③}{.15} = \boxed{.00159221}$$

$$\frac{\partial E}{\partial W_3} = \overset{①}{-.0134} \cdot \underset{②}{.2092} \cdot \overset{③}{.35} = \boxed{-.000981148}$$

$$\frac{\partial E}{\partial W_4} = \overset{①}{.0437} \cdot \underset{②}{.2429} \cdot \overset{③}{.35} = \boxed{.003715156}$$