Part 4

$$\delta_b = \left(\sum_c \delta_z W_b\right) out_i (1 - out_i)$$

$$\frac{\partial E}{\partial BW_2} = \left(\sum_c \delta_z W_{7+8}\right) out_{b2}(1 - out_{b_2})$$

$$.0437 \cdot .5841 \cdot (1 - .5841) = \boxed{-.01061592}$$

$$1 - .4159$$

Updating general weights

$$W_8 = W_8 - \eta \cdot \frac{\partial E}{\partial W_8}$$

$W_8 = .07 - (-.01505) = \boxed{.0851}$

$W_7 = .33 - .5 \cdot .0836$

$.33 - .0418 = \boxed{.2882}$

$W_6 \quad .4 - .5 \cdot (-.0362)$

$.4 - (-0.0181) = \boxed{.4181}$

$W_5 \quad .05 - .5 \cdot .1005$

$.05 - .05025 = \boxed{.00025}$

$W_4 \quad .17 - .5 \cdot .003715156$

$.17 - 0.01857578 = \boxed{.1514}$

$W_3 \quad .12 - .5 \cdot (-0.000981148)$

$.12 - (-.000490574) = \boxed{.1205}$

$W_2 \quad .2 - .5 \cdot (.0015922)$

$.2 - (.0007961105) = \boxed{.1992}$

$W_1 \quad .1 - .5 \cdot (-.000420492)$

$.1 - (-.00021024\mathcal{L}) = \boxed{.1002}$

$BW_4 \quad .7 - .5 \cdot (-.0515)$

$.7 - (-.02575) = \boxed{.7258}$

$Bw_3 \quad .15 - .5 \cdot .1432$

$.15 - .0716 = \boxed{.0784}$

$Bw_2 \quad .25 - .5 \cdot .016$

$.25 - .008 = \boxed{.242}$

$Bw_1 \quad .8 - .5 \cdot (-.0028)$

$.8 - (-.014) = \boxed{.814}$