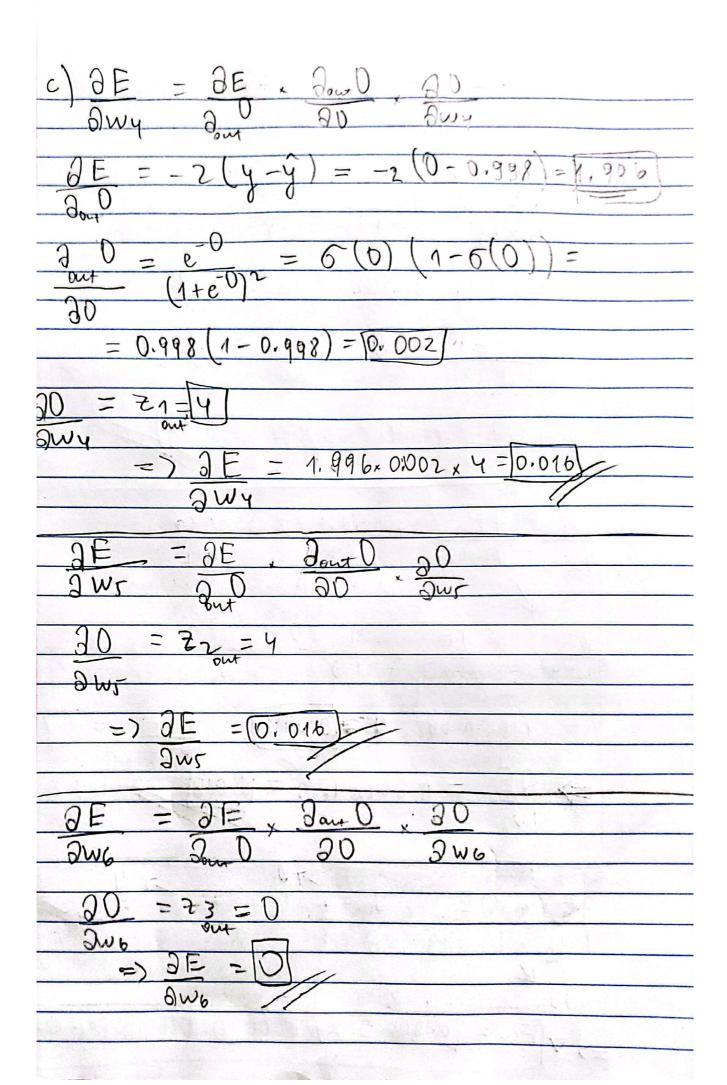
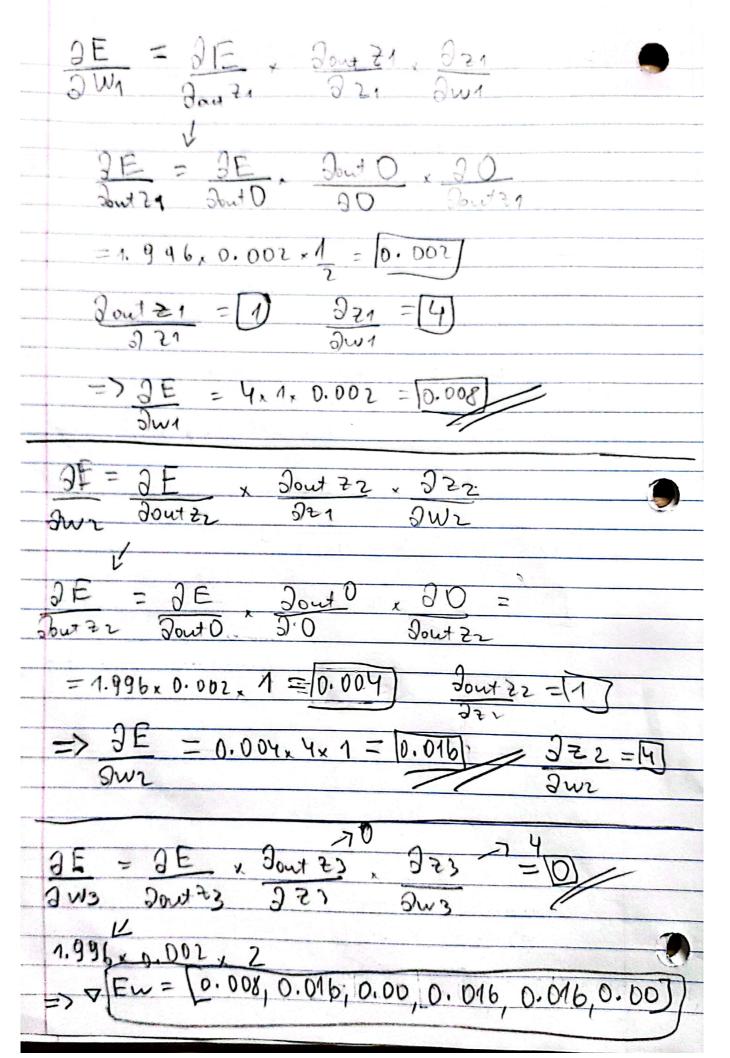
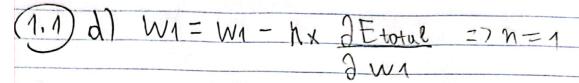
Homework 7
$(1.1) W = [1,1,-1,0.5,1,2]^T$
Rell hidden layer activation f-n Sigmoid output layer act. t-n
x=4, $y=0$
$W_1 = 1$, $W_2 = 1$, $W_3 = -1$, $W_4 = 0.5$, $W_5 = 1$, $W_6 = 2$
$Z_1 = XW_1 = 4x_1 = 4$ -7 5 $Z_2 = XW_2 = 4x_1 = 4$
Z3 = xw3 = 4, (-1) = -4 =) 0 because Z3 < 0
adput of the 2's will be used for the
network input = > 0= W421 + W5 &z + W6 &z= = (0.5), 4 + 1, 4 + 2, 0 = 2+4=6
=P output -> o(w[x]= o(6)
$5(0) = \frac{1}{1 + e^{-0}} = 0.998$
b) E= 21 target - autput)2 =
= 10(0+0.998)2 = [0.2498]
c) vi. [= 8E]





HW7 continuation



updated weights

$$71 = 4 \times 0.992 = 3.968$$

 $72 = 4 \times 0.984 = 7.936$
 $73 = 4 \times (-1) = -4 -> 7304 = 0$

=) Output =
$$0_{\text{out}} = 0$$
 (5.794) = 1 = 1+ $e^{-5.794}$

$$\frac{E}{total} = \frac{1}{2} (0.-0.997)^2 = 0.497$$

e) We see that the new weights improved this NN as the loss decreased > Ez < E1.