

ECS 170

Problem Set #6

Hadi B.  
919580019

1)

$w_1$	$w_2$	$w_3$	$w_4$	$w_5$	$w_6$	$T_1$	$T_2$	$T_3$
1	1	1	1	1	-1	0	1	0

Node 3: OR  
Node 4: AND  
output: XOR

2)

$x_1$	$x_2$	$T_1 = 0$	$x_1$	$x_2$	$T_2 = 1$	$T_1$	$T_2$	$T_3 = 0$
0	0	$0 \leq 0 = 0$	0	0	$0 < 0 = 0$	0	0	$0 \leq 0 = 0$
0	1	$1 > 0 = 1$	0	1	$1 \leq 1 = 0$	1	0	$1(1) + 0(-1) > 0 = 1$
1	0	$1 > 0 = 1$	1	0	$1 \leq 1 = 0$	1	0	$1(1) + 0(-1) > 0 = 1$
1	1	$2 > 0 = 1$	1	1	$2 > 1 = 1$	1	1	$1(1) + 1(-1) \leq 0 = 0$

$$x_4 = g(w_{1,4} \cdot x_1 + w_{2,4} \cdot x_2)$$

$$O_5 = g(w_{3,5} \cdot g(w_{1,3} \cdot x_1 + w_{2,3} \cdot x_2) + w_{4,5} \cdot g(w_{1,4} \cdot x_1 + w_{2,4} \cdot x_2))$$

$$O_6 = g(w_{3,6} \cdot g(w_{1,3} \cdot x_1 + w_{2,3} \cdot x_2) + w_{4,6} \cdot g(w_{1,4} \cdot x_1 + w_{2,4} \cdot x_2))$$