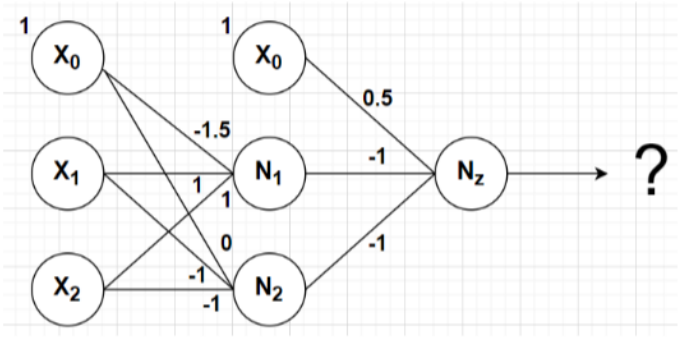
Question:

What is this gate? Identify the logical gate for every neuron. Show all the steps taken to solve this and identify which logical gate the output of the network corresponds to. Assume the threshold for the activation function is 0.



Solution

IF((X_n*W)+(X_n*W)+(X_0*W)>=0, 1, 0)

Where X_n are the respective neurons in the graph and W is the correct edge leading to the correct node.

		AND	NAND	XOR	
X1	X2	N1	N2	Nz	Y: g(x;w)
0	0	=IF(((A24*1) + (B24*1) -1.5)>=0, 1,0)	=IF((A24*-1) + (B24*-1) >= 0, 1, 0)	=IF(((C24*-1)+(D24*-1)+0.5)>0, 1, 0)	=E24
0	1	=IF(((A25*1) + (B25*1) -1.5)>=0, 1,0)	=IF((A25*-1) + (B25*-1) >= 0, 1, 0)	=IF(((C25*-1)+(D25*-1)+0.5)>0, 1, 0)	=E25
1	0	=IF(((A26*1) + (B26*1) -1.5)>=0, 1,0)	=IF((A26*-1) + (B26*-1) >= 0, 1, 0)	=IF(((C26*-1)+(D26*-1)+0.5)>0, 1, 0)	=E26
1	1	=IF(((A27*1) + (B27*1) -1.5)>=0, 1,0)	=IF((A27*-1) + (B27*-1) >= 0, 1, 0)	=IF(((C27*-1)+(D27*-1)+0.5)>0, 1, 0)	=E27

		AND	NAND	XOR		
X1	X2	N1	N2	Nz	Y: g(x;w)	
0	0	0	1	0	0	<-- XOR
0	1	0	0	1	1	
1	0	0	0	1	1	
1	1	1	0	0	0	