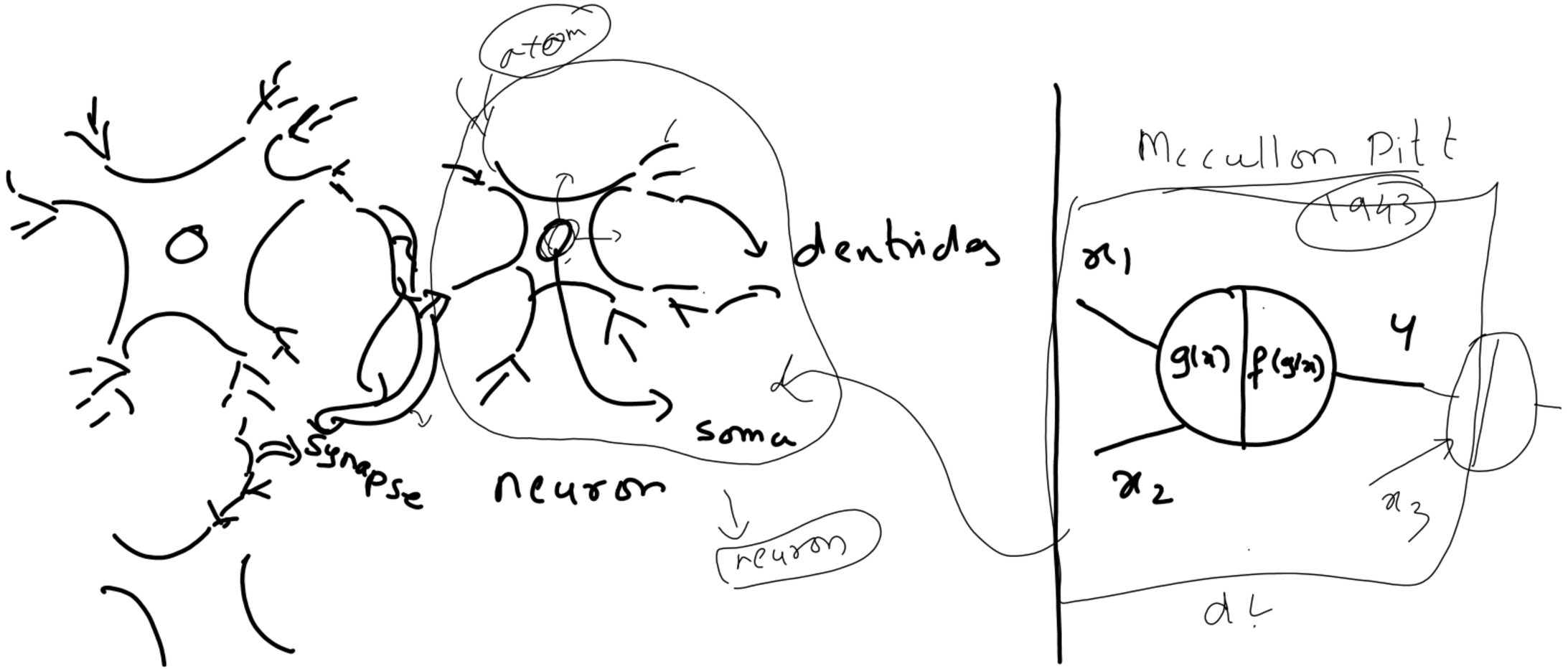
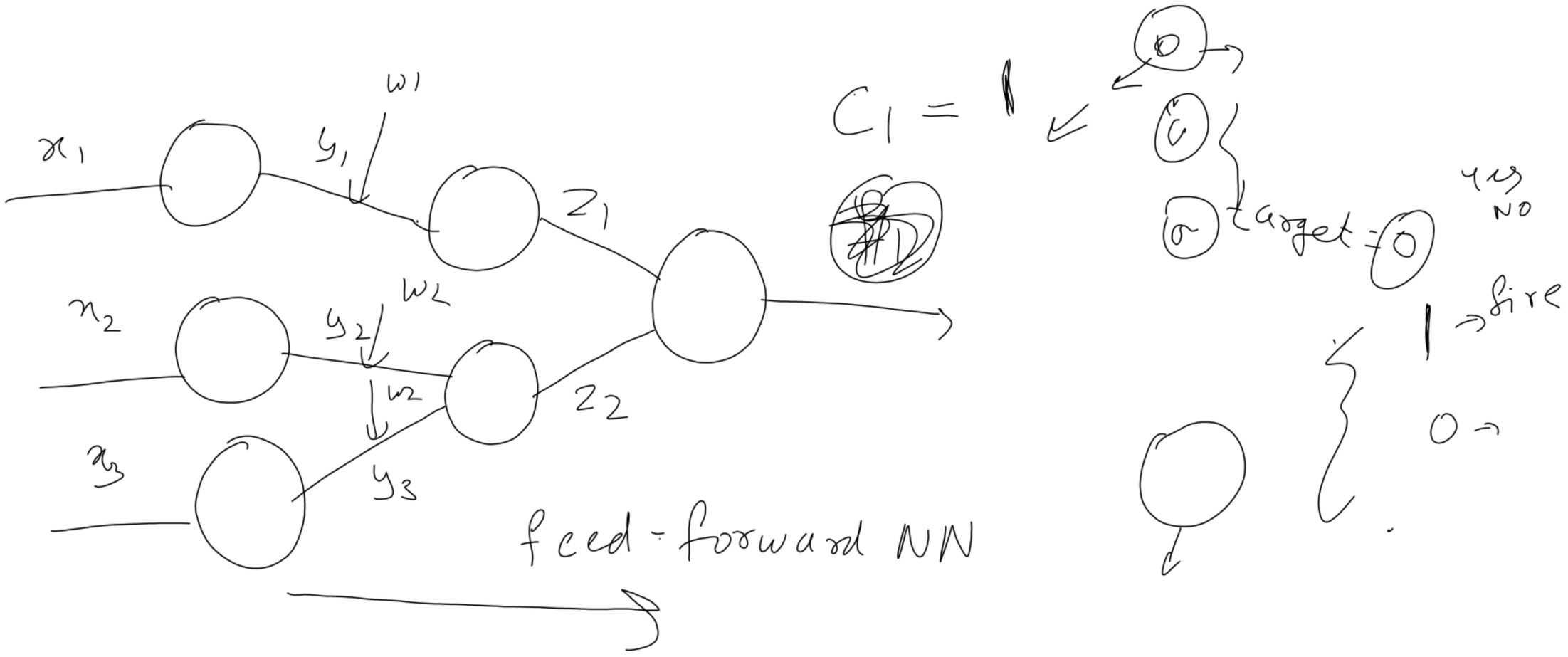
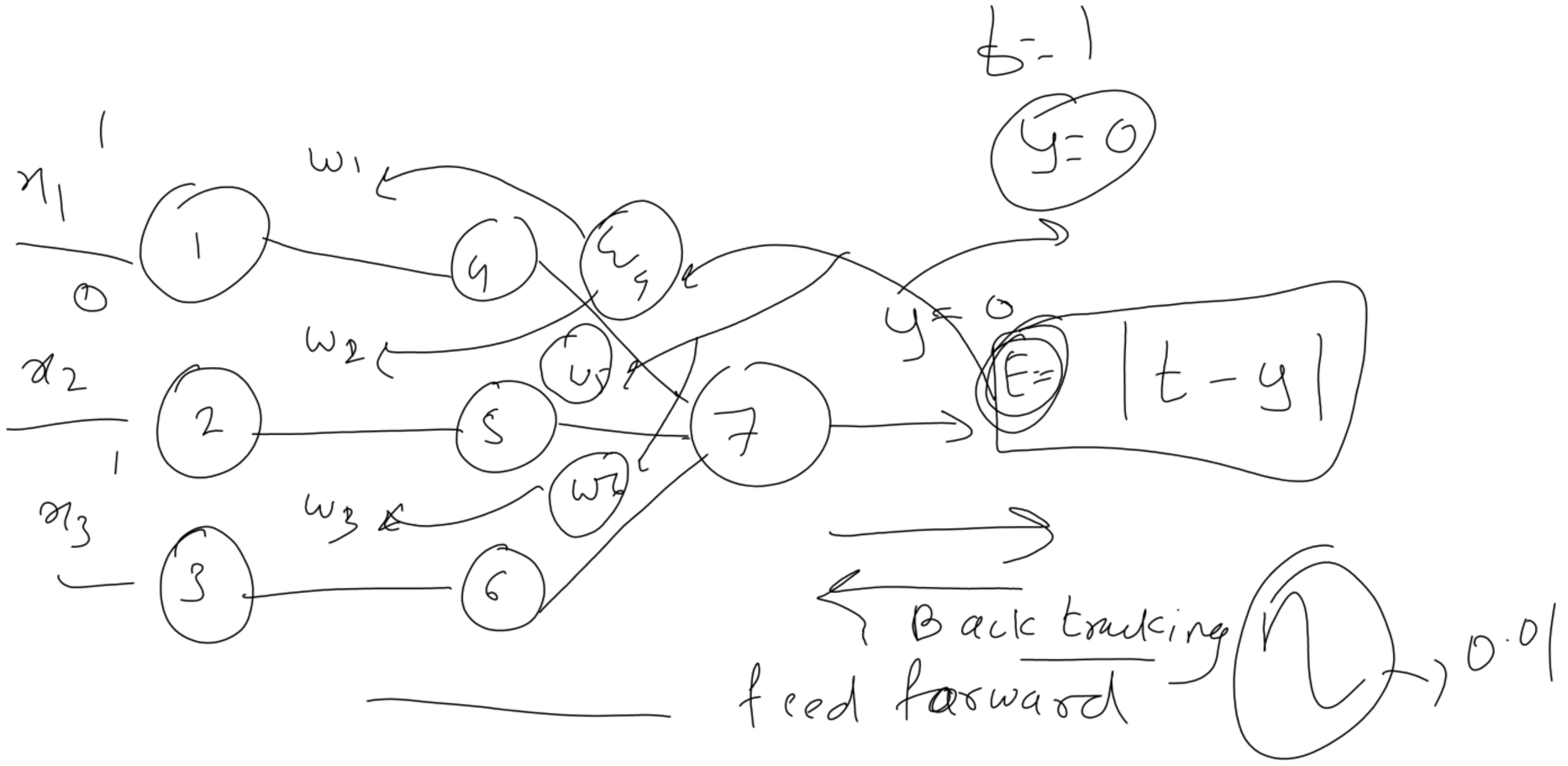
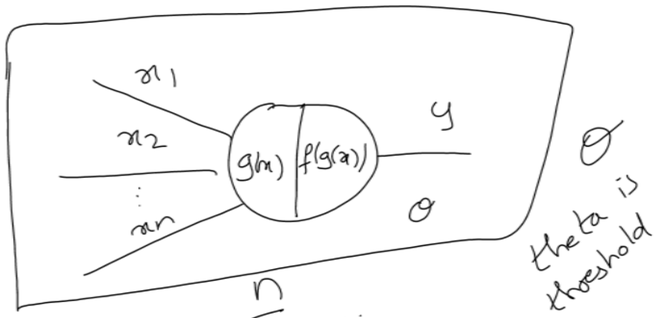

axon
dentrides
soma
synapse
neuron
neuron
Mccullon Pitt
1943
x_1
x_2
x_3
g(x)
f(g/x)
y
dL


x_1
x_2
x_3
w_1
w_2
y_1
y_2
y_3
z_1
z_2
$C_1 =$
target = 0
yes
NO
fire
0 →
feed-forward NN

Delta Rule


t = 1
y = 0
x1
1
0
x2
2
1
x3
3
w1
w2
w3
4
5
6
7
E
y = 0
|t - y|
Back tracking
feed forward
η
0.01

McCulloch pitts Neuron



θ is the threshold

$$g(x) = \sum_{i=1}^{n} x_i \qquad f(g(x)) \quad \theta \geq 1$$

$f(g(x))$

$y =$ $f(g(x))$ if $\theta \geq 1$; 0 if $\theta < 1$

OR gate

x_1	x_2	$g(x)$	$f(g(x))$
0	0	0	0
0	1	1	0
1	0	1	0
1	1	2	1

$$g(x) = \sum_{i=1}^{n} x_i \qquad x_1 + x_2 =$$

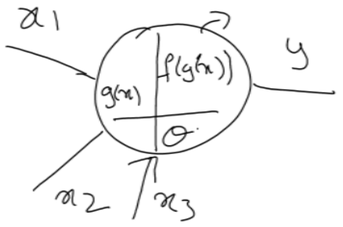
(1) $g(x) = x_1 + x_2 = 0 + 0 = 0$

(2) $g(x) = 0 + 1 = 1$

(3) $g(x) = 1 + 0 = 1$

(4) $g(x) = 1 + 1 = 2$

$f(g(x))$ OR AND θ



$$g(x) = \sum_{i=1}^{n} x_i \qquad \theta =$$

$f(g(x))$: 1 if $\theta \geq 1$; 0 if $\theta < 1$

AND OR θ

x_1	x_2	x_3	$g(x)$	$f(g(x))$
0	0	0	0	0
0	0	1	1	0
0	1	0	1	0
1	0	0	1	0
0	1	1	2	0
1	0	1	2	0
1	1	0	2	0
1	1	1	3	1

$\theta \geq 2$