Q1) $\frac{\partial L}{\partial y} = \frac{y - t}{y(1-y)}$

$\frac{\partial y}{\partial v} = y(1-y)$

$\frac{v}{w} = x$

$\frac{\partial L}{\partial w} = x(y-t)$

Q2) by using gradient descent yes, No

Q3)

```
[[2.80833066e-09, 5.06988749e-07, 4.79815525e-07, 1.70590275e-05,
  7.71537220e-01, 4.53664897e-01, 4.43626272e-29, 2.24422084e-29],
 [8.12633070e-01, 8.97648220e-01, 8.69824223e-01, 6.12852480e-01,
  1.87441287e-09, 4.87460735e-11, 5.76569291e-08, 4.00551213e-08]]
```

Q4)

0.8
0.6
0.4
0.2
0.0
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8