Business Data Mining (IDS 572)

Homework 7 Questions 1, 2 - Solution

Question 1:

Normalized inputs:

Age: (70-20)/(80-20) = 0.8333

Inc: (50-10)/(110-10) = 0.4

$$z_1 = -3 + 0.833 * 4 + 0.4 * 2 = 1.133 \rightarrow \frac{1}{1+e^{-1.133}} = 0.756$$

$$z_2 = 1 + 0.833 * (-2) + 0.4 * 2 = 0.133 \rightarrow \frac{1}{1+e^{-0.133}} = 0.533$$

$$y = 1 + 0.756 * (-3) + 0.533 * 3 = 0.3305 \rightarrow \frac{1}{1+e^{-0.3305}} = 0.582$$

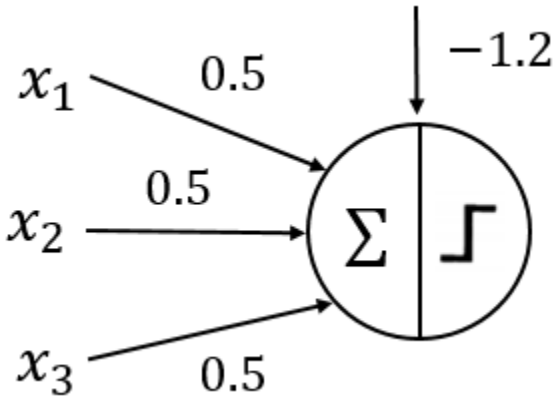
Output = 0.582.

The output is Maybe.

Question 2:

We use the step functions in both of the networks below.

(a)



(b)