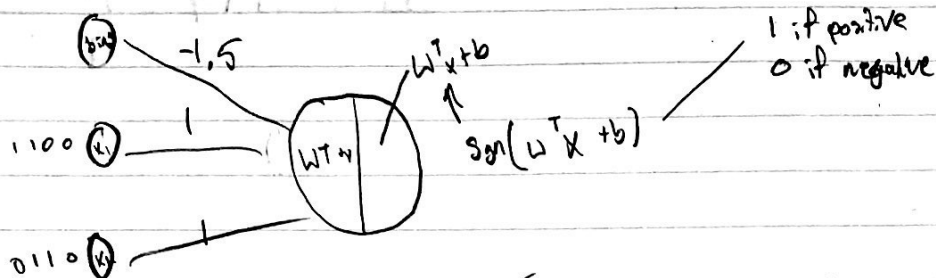
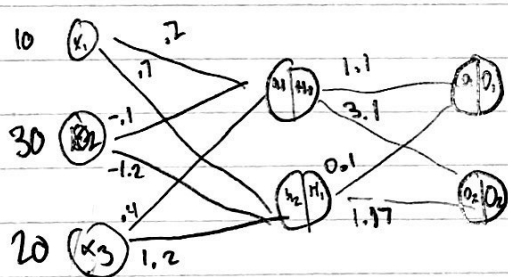


In Class 10



| Input | $W^T x + b$ | Output | $W^T x + b$ | Output |
|-------|-------------|--------|-------------|--------|
| (0,0) | -1.5 | 0 | -0.5 | 0 |
| (0,1) | -0.5 | 0 | 0.5 | 1 |
| (1,1) | 0.5 | 1 | 1.5 | 1 |
| (1,0) | -0.5 | 0 | 0.5 | 1 |



activation function is sigmoid $\frac{1}{1+e^{-x}}$

$$h_1 = 10(0.2) + 30(-0.1) + 20(0.4) = 7 \quad H_1 = \frac{1}{1+e^{-7}} \approx 0.99$$

$$h_2 = 10(0.7) + 30(-1.2) + 20(1.2) = -5 \quad H_2 = \frac{1}{1+e^{-5}} \approx 0.00669$$

$$O_1 = 0.99(1.1) + 0.00669(0.1) \approx 1.099$$

$$O_1 = \frac{1}{1+e^{-1.099}} \approx 0.75$$

$$O_2 = 0.99(3.1) + 0.00669(1.17) \approx 3.09$$

$$O_2 = \frac{1}{1+e^{-3.09}} \approx 0.957$$

$$PO_1 = \frac{0.75}{0.75+0.957} \approx 44\%$$

$$PO_2 = \frac{0.957}{0.75+0.957} \approx 56\%$$