

# XOR

$$X = \begin{bmatrix} X_1 \\ X_2 \\ X_0 \end{bmatrix} = \begin{bmatrix} 1.0 \\ 0.0 \\ 1 \end{bmatrix}$$

bias

$$W = \begin{bmatrix} W_{11} & W_{21} \\ W_{12} & W_{22} \\ b_1 \end{bmatrix} = \begin{bmatrix} 3.7 & 2.9 \\ 3.7 & 2.9 \\ -1.5 & -4.5 \end{bmatrix}$$

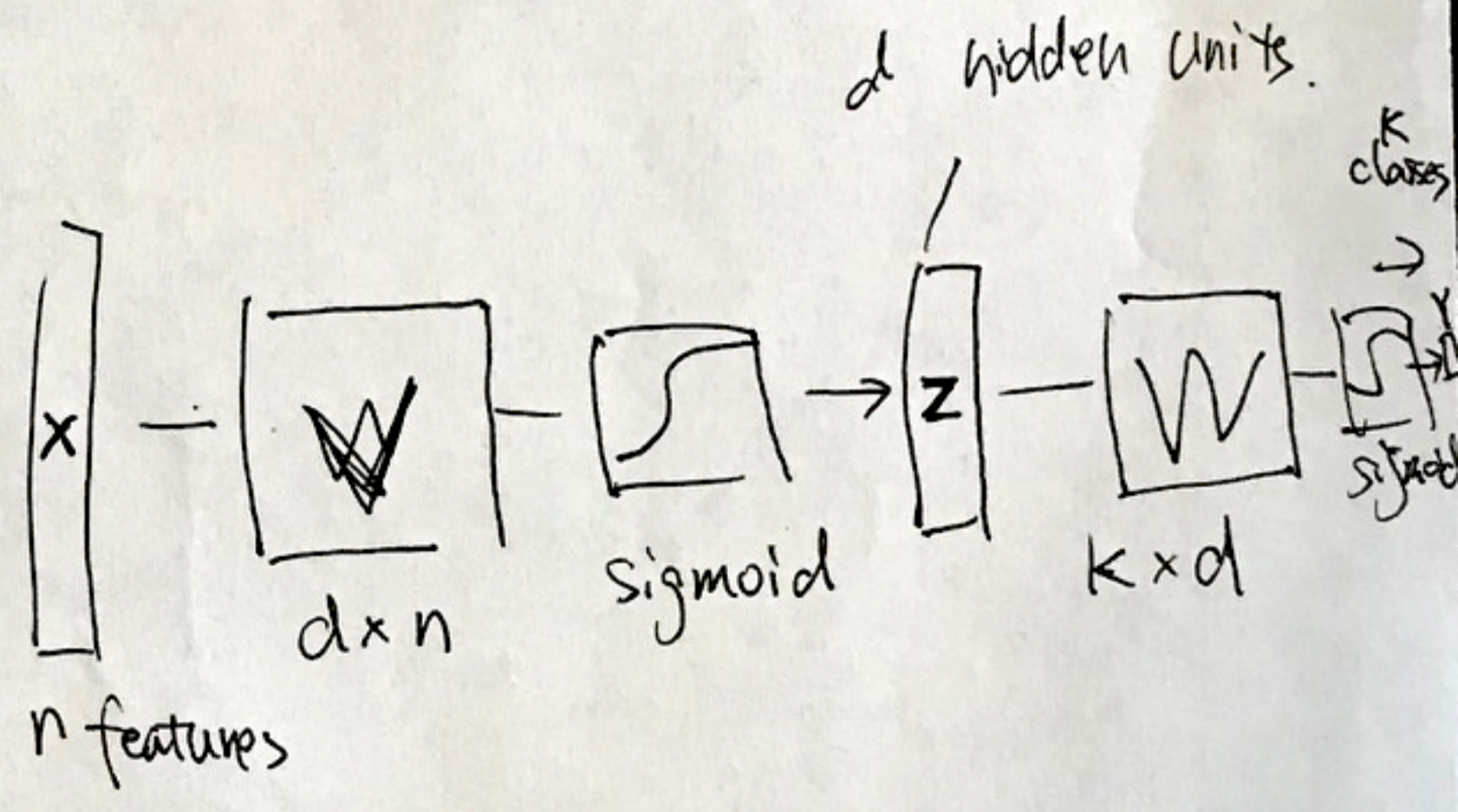
$$V = \begin{bmatrix} W_{11} & W_{12} & b_1 \\ W_{21} & W_{22} & b_2 \end{bmatrix} = \begin{bmatrix} 3.7 & 3.7 & -1.5 \\ 2.9 & 2.9 & -4.5 \end{bmatrix}$$

$$X = \begin{bmatrix} X_1 \\ X_2 \\ X_0 \end{bmatrix} = \begin{bmatrix} 1.0 \\ 0.0 \\ 1 \end{bmatrix}$$

$$Z = \begin{bmatrix} 0.90 \\ 0.17 \\ 1 \end{bmatrix}$$

$$W = [4.5 \quad -5.2 \quad -2.0]$$

$$\hat{y} = \text{sigmoid}(Wz) = 0.76$$



$$Z = \text{sigmoid}(Wx)$$