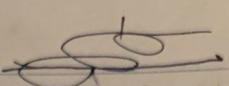


Collaboration: I discussed with my teammate almost every question. Also I discussed with JiaQi He for 1.3 and 2.2 and question 3

3.1 steps:

3.1 ~~3.1~~ 

$$Z: w_0 + w_1 x_{i1} + w_2 x_{i2}$$

$$\text{row 1: } w_0 + w_1 \cdot 1 + w_2 \cdot 1 = -2.85767$$

$$\text{row 2: } w_0 + w_1 \cdot 2.2 + w_2 \cdot 1.6 = -1.9215$$

$$\text{row 3: } w_0 + w_1 \cdot 2.5 + w_2 \cdot 1.8 = -1.64256$$

$$\text{row 4: } w_0 + w_1 \cdot 2.8 + w_2 \cdot 1.5 = -1.81253$$

$$\text{row 5: } w_0 + w_1 \cdot 2.9 + w_2 \cdot 1.2 = -2.04875$$

$$\text{row 6: } w_0 + w_1 \cdot 3 + w_2 \cdot 3 = -0.39955$$

$$\textcircled{1} P(Y=1|X_1) = \frac{1}{1+e^{-2.85767}} = 0.9457 \checkmark$$

$$\textcircled{2} P(Y=0|X_1) = \frac{e^z}{1+e^z} = 0.0543$$

$$\textcircled{3} P(Y=1|X_2) = \frac{1}{1+e^z} = 0.8723 \checkmark, P(Y=0|X_2) = 0.1277$$

$$\textcircled{4} P(Y=1|X_3) = \frac{1}{1+e^z} = 0.8379 \checkmark, P(Y=0|X_3) = 0.1621$$

$$\textcircled{5} P(Y=1|X_4) = 0.85967 \checkmark, P(Y=0|X_4) = 0.1403$$

$$\textcircled{6} P(Y=1|X_5) = 0.8858 \checkmark, P(Y=0|X_5) = 0.1142$$

$$\textcircled{7} P(Y=1|X_6) = 0.59858 \checkmark, P(Y=0|X_6) = 0.40142$$