29 Logistic Regression & Gradient Descent

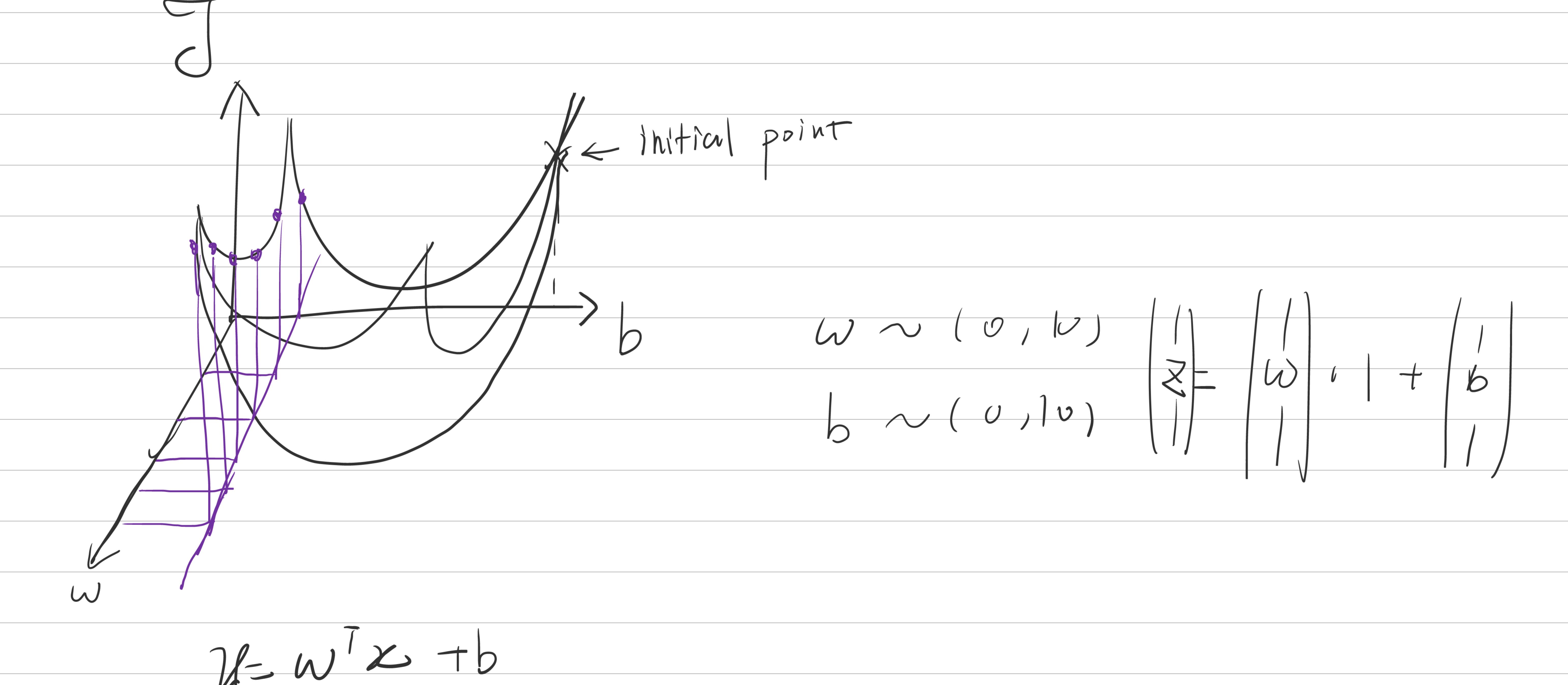
Goal: How to compute derivatives

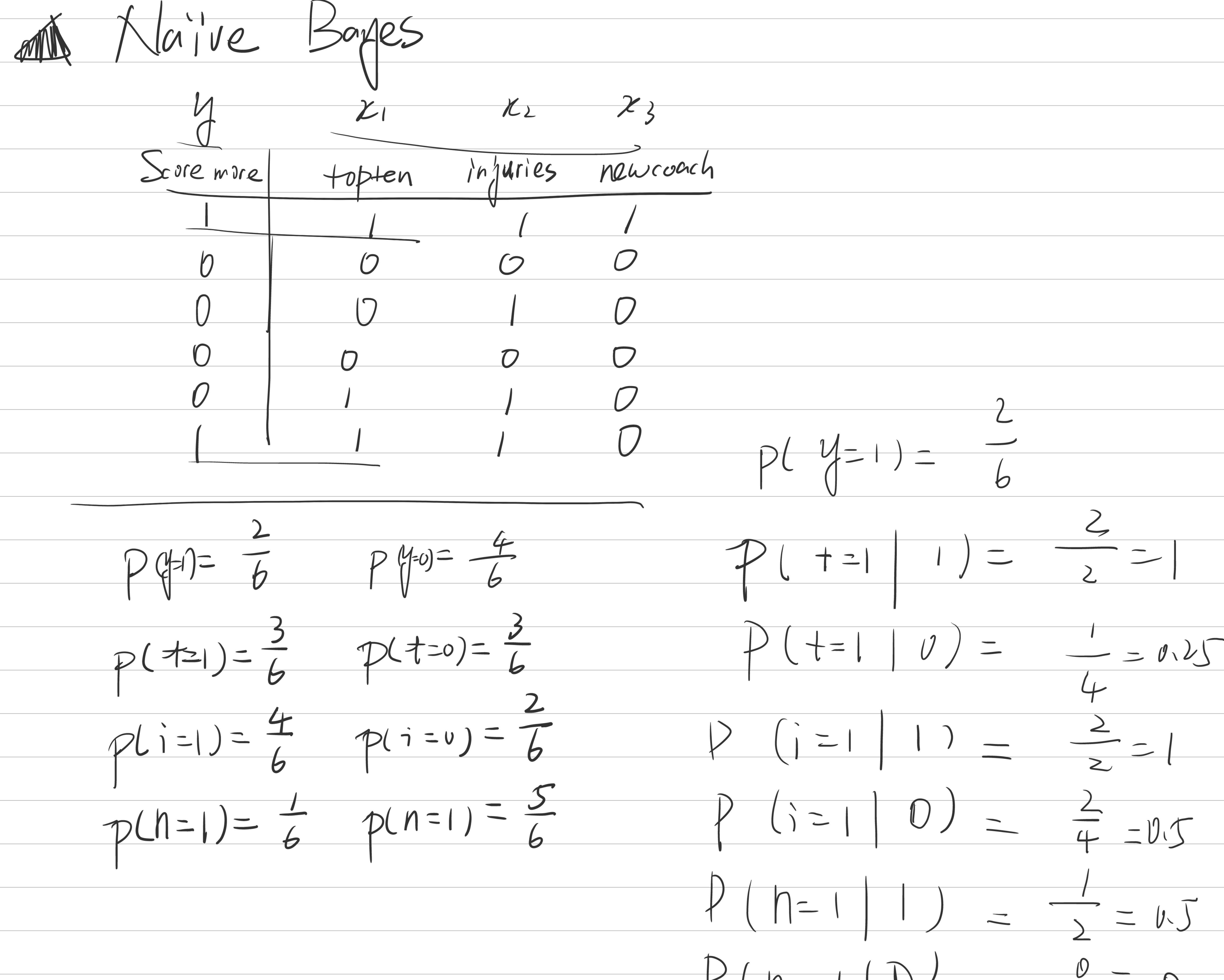
$$\frac{dL}{dZ} = \frac{dL}{d\hat{y}} \cdot \frac{d\hat{y}}{dZ} = \left(-\frac{y}{\hat{y}} + \frac{1-y}{1-\hat{y}}\right) \cdot \hat{y}(1-\hat{y}) = \hat{y}^{-1}\hat{y}$$

$$\frac{dL}{dW_1} = \frac{dL}{dZ} \cdot \frac{dZ}{dW_1} = (\hat{y} - \hat{y})\chi_1 =) \quad W_1 := W_1 - \times \frac{dL}{dW_1}$$

$$\frac{dL}{dW_2} = \frac{dL}{dZ} \cdot \frac{dZ}{dW_2} = (\hat{y} - \hat{y})\chi_2 =) \quad W_2 := W_2 - \times \frac{dL}{dW_2}$$

$$\frac{dL}{dW_2} = \frac{dL}{dZ} \cdot \frac{dZ}{dW_2} = (\hat{y} - \hat{y})\chi_2 =) \quad W_2 := W_2 - \times \frac{dL}{dW_2}$$





 $P(n-1/D) = \frac{0}{4} = 0$