Notes 1.1 Logistic Regression

Given an input feature vector X , you want an algorithm that will output a prediction Y^* , which is an estimation of y more formally $Y = P(y = 1|x)$ this means that Y^* is the probability of the chance that y = 1 given the input features x.

So if the parameters of Logistic regression are "w" (which is a real number with "n" dimensions) and "b" which is just a real number.

So now we want an equation for Y^*, so one thing we can do is w transpose of x plus b which would look like $Y^* = w^T x + b$, which is obviously a linear function. but the problem with this is that Y^* has to be $0 \leq Y^* \leq 1$, so now what we can do is use the sigmoid function. and then it would look like $Y^* = \partial(w^T x + b)$, where $\partial(z) = 1/1 + e^{-z}$.