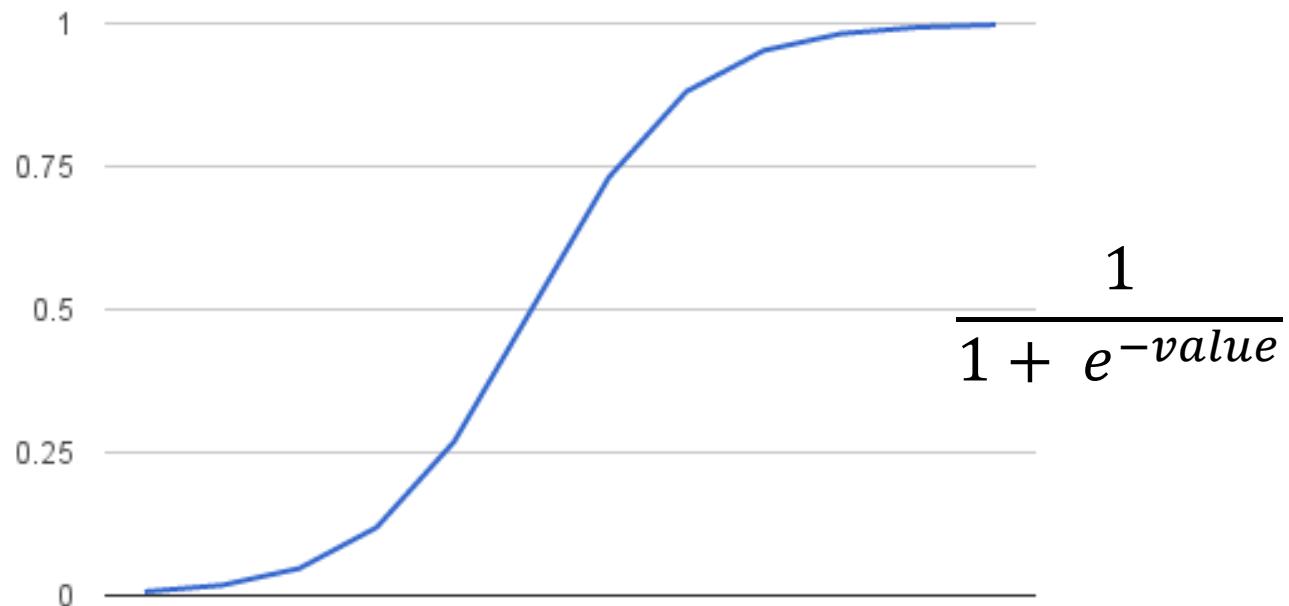


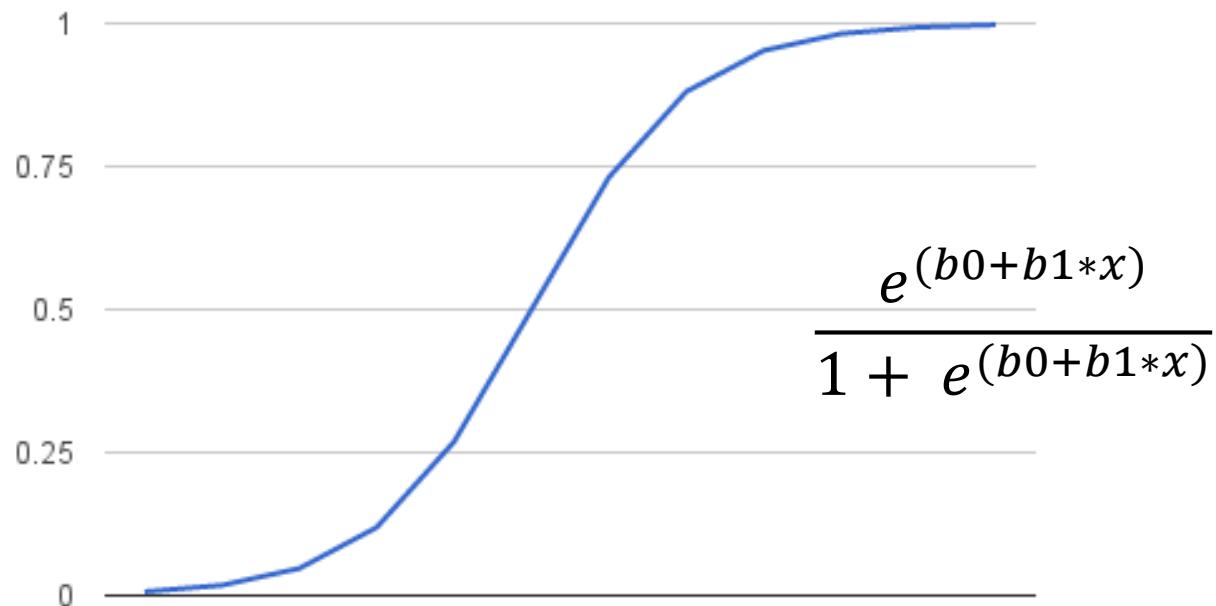
Logistic Regression

MODEL 1

Logistic Function



Logistic Regression



Logistic Regression

- b values are estimated from the training data
 - Maximum-likelihood estimation:
 - Minimize error in probabilities predicted by the model to those in the data

$$y = \frac{e^{(-100+0.6*150)}}{1 + e^{(-100+0.6*x)}}$$

$$y = 0.000045$$

Or probability of near zero that the person is male.

Example

- Problem: make a prediction (1) female or (2) male based on height.
 - Given: Height = 150cm ($\sim 4' 9''$)
 - Estimated $b_0 = -100$, $b_1 = 0.6$