

$$\log\left(\frac{p}{1-p}\right) = \beta_0 + \beta_1 x$$

$$p = P[Y = 1] = \frac{e^{(\beta_0 + \beta_1 x)}}{1 + e^{(\beta_0 + \beta_1 x)}} = \frac{1}{1 + e^{-(\beta_0 + \beta_1 x)}}$$