

# Classification

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## 1 Logistic Regression

- The probabilities of  $y = 1$  and  $y = -1$  are expressed by  $\frac{e^{\beta_0 + x\beta}}{1 + e^{\beta_0 + x\beta}}$  and  $\frac{1}{1 + e^{\beta_0 + x\beta}}$

$$\frac{1}{1 + e^{-y(\beta_0 + x\beta)}}$$