

$$\begin{aligned}
 P(y = 1|x) \\
 &= g(\theta^T x) \\
 &= \frac{1}{1 + e^{-\theta^T x}}
 \end{aligned}$$

$$\begin{aligned}
 P(y = 0|x) \\
 &= 1 - g(\theta^T x) \\
 &= 1 - \frac{1}{1 + e^{-\theta^T x}} \\
 &= \frac{e^{-\theta^T x}}{1 + e^{-\theta^T x}}
 \end{aligned}$$