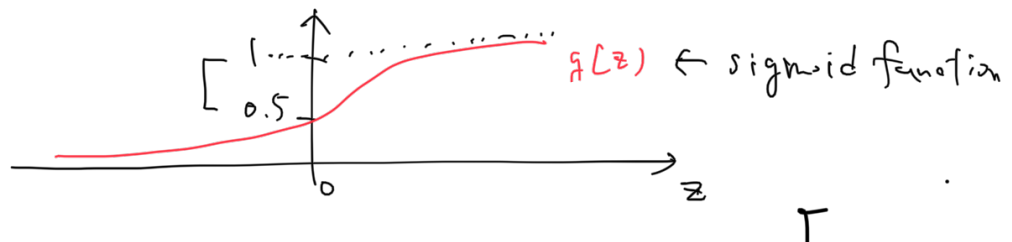


1

want $0 \leq h_{\theta}(x) \leq 1$

$$h_{\theta}(x) = g(\theta^T x)$$

$$\rightarrow g(z) = \frac{1}{1 + e^{-z}}$$



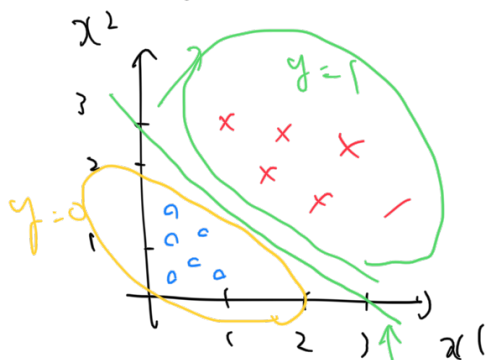
$h_{\theta}(x) = 0.7$.. Tell patient that 70% chance of tumor being malignant.

Decision Boundary

$$p(y=0|x;\theta) + p(y=1|x;\theta) = 1$$

$$y=1 \text{ if } h_{\theta}(x) \geq 0.5 \quad (\checkmark)$$

$$y=0 \text{ if } h_{\theta}(x) < 0.5$$



$$\theta = \begin{bmatrix} -3 \\ 1 \\ 1 \end{bmatrix}$$

$$\rightarrow h_{\theta}(x) = g(\theta_0 + \theta_1 x_1 + \theta_2 x_2)$$

Decision Boundary

Predict $y=1$ if $-3 + x_1 + x_2 \geq 0$

$$x_1 + x_2 = 3$$

$$(\checkmark) h_{\theta}(x) = 0.5$$

Non linear Decision Boundary

