Model Representation

training ex. $(x^{(i)}, y^{(i)})$ i번째 example

〈Supervised 지도학습〉

Our goal is to learn a function

$h : X \to Y$ so that $h(x)$ is a "good" predictor for the corresponding value of y

Training set

↓

Learning algorithm

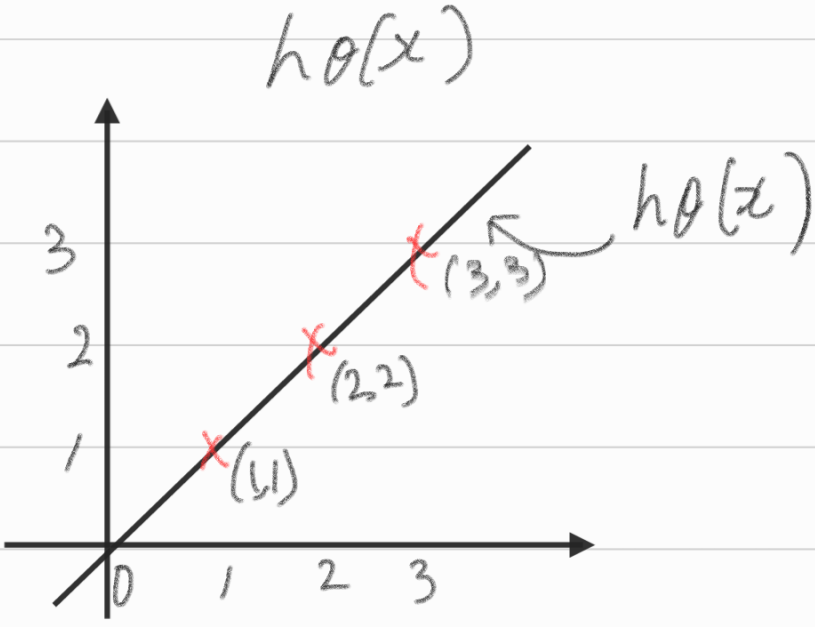
↓

$x \longrightarrow h \longrightarrow$ predicted y

Cost Function – Squared Error function (MSE)

$$J(\theta_0, \theta_1) = \frac{1}{2m} \sum_{i=1}^{m} (\hat{y}_i - y_i)^2 = \frac{1}{2m} \sum_{i=1}^{m} (h_\theta(x_i) - y_i)^2$$

Minimize θ_0, θ_1 # of training ex.



$$J(\theta_1) = \frac{1}{2m}\sum_{i=1}^{m}\left(h_\theta(x^{(i)}) - y^{(i)}\right)^2$$

$$= \frac{1}{2m}\sum_{i=1}^{m}\left(\theta_1 x^{(i)} - y^{(i)}\right)^2 = 0$$

$\rightarrow J(1) = 0$

θ_1이 1일 때, 오차는 '0'

θ_1이 0.5라면 오차有 $\Rightarrow$ 0.58

On same contour, same value of cost function