$$ms\varepsilon = \frac{1}{n}\sum_{i=1}^{n}\left(y_i - (mx_i + b)\right)^2$$

$$\partial/_{\partial m} = \frac{2}{\mathrm{n}}\sum_{i=1}^{n} -x_i\left(y_i - (mx_i + b)\right)$$

$$\partial/_{\partial b} = \frac{2}{\mathrm{n}}\sum_{i=1}^{n} -\left(y_i - (mx_i + b)\right)$$

MSE(cost function) =RSS/N

RSS = $\varepsilon(Y - y_{pred})^2$

Ypred =mx+b

Here m means slope and b=intercept

MSE= $\varepsilon(Y - y_{pred})^2$ **/N**

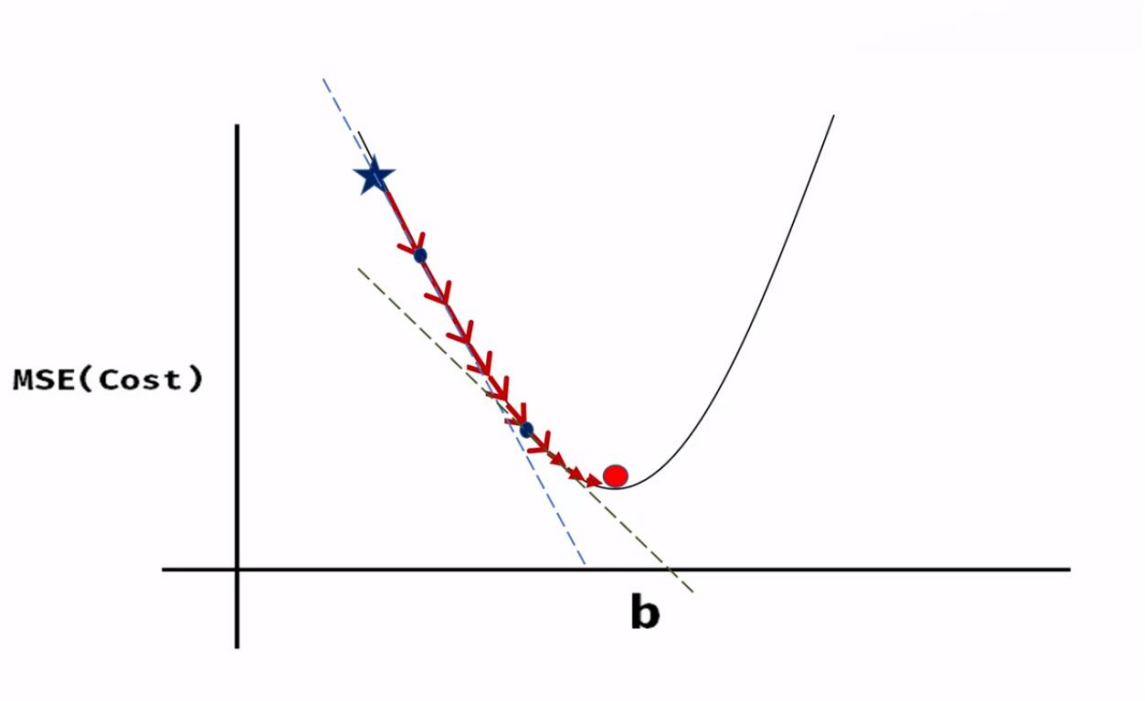
MSE= $\varepsilon(Y - (mx + b))^2$ **/N**

Minimize MSE : differentiate

M = $\Theta 1$ **and b=** $\Theta 0$

$d/dx(x^2) = 2X^{2-1} = 2X$

$d/dx(x^n) = nx^{n-1}$



$$m = m - \text{learning rate} * {}^{\partial}/_{\partial m}$$

$$b = b - \text{learning rate} * {}^{\partial}/_{\partial b}$$