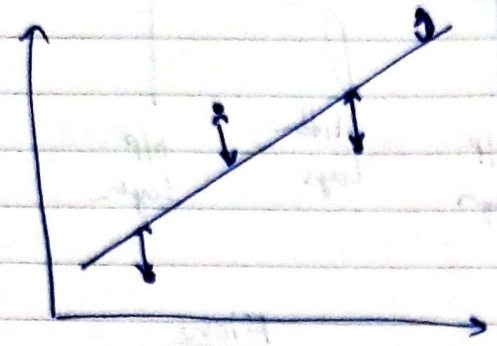
COST FUNCTION

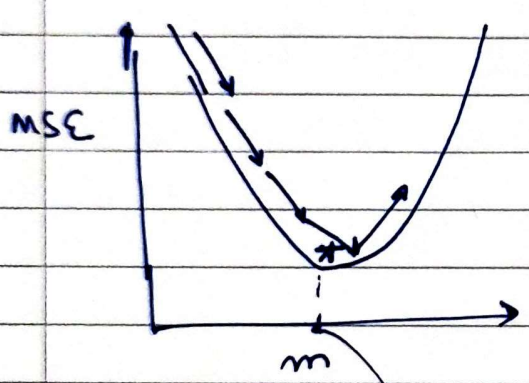
MSE ⇒ also called Cost Function



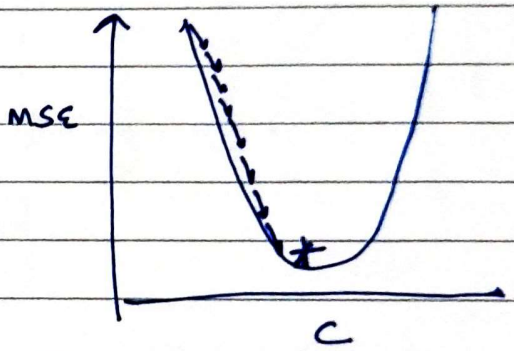
$$MSE = \frac{1}{n}\sum_{i=1}^{n}(y_i - y_p)^2$$

★ Our aim is to find values of m & c, such that the line generated would be the best fit line for our data points.

GRADIENT DESCENT



(fixed nature of step)



(variable length of step)

FORMULAS

initial step or starting point

$m = m - \text{Learning Rate} * \text{Partial derivate of } m$

$c = c - \text{Learning Rate} * PD(c)$

$$MSE = \frac{1}{n} \sum_{i=1}^{n} (y_i - (mx_i + c))^2$$

$$PD(m) = \frac{-2}{n} \sum_{i=1}^{n} x_i \cdot (y_i - (mx_i + b))$$

* $$PD(c) = \frac{-2}{n} \sum_{i=1}^{n} (y_i - (mx_i + b))$$