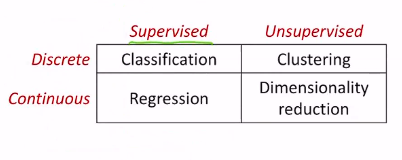
**Machine Learning : Linear Regression**

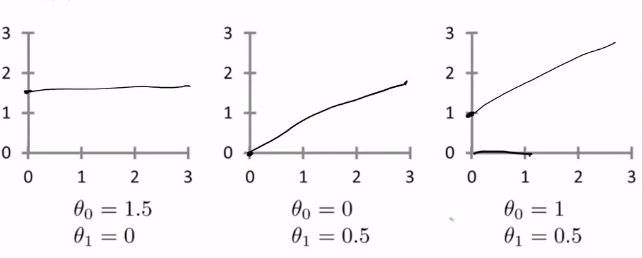
**Characterization of machine learning problems**

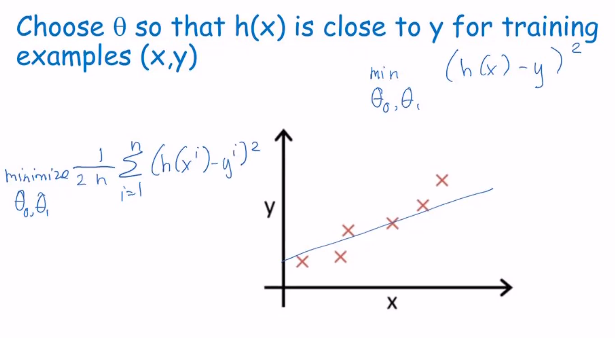


* **Discrete – Text values**
* **Continuous – Numeric values**

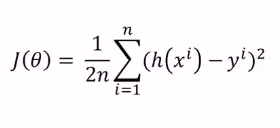
**Goal**

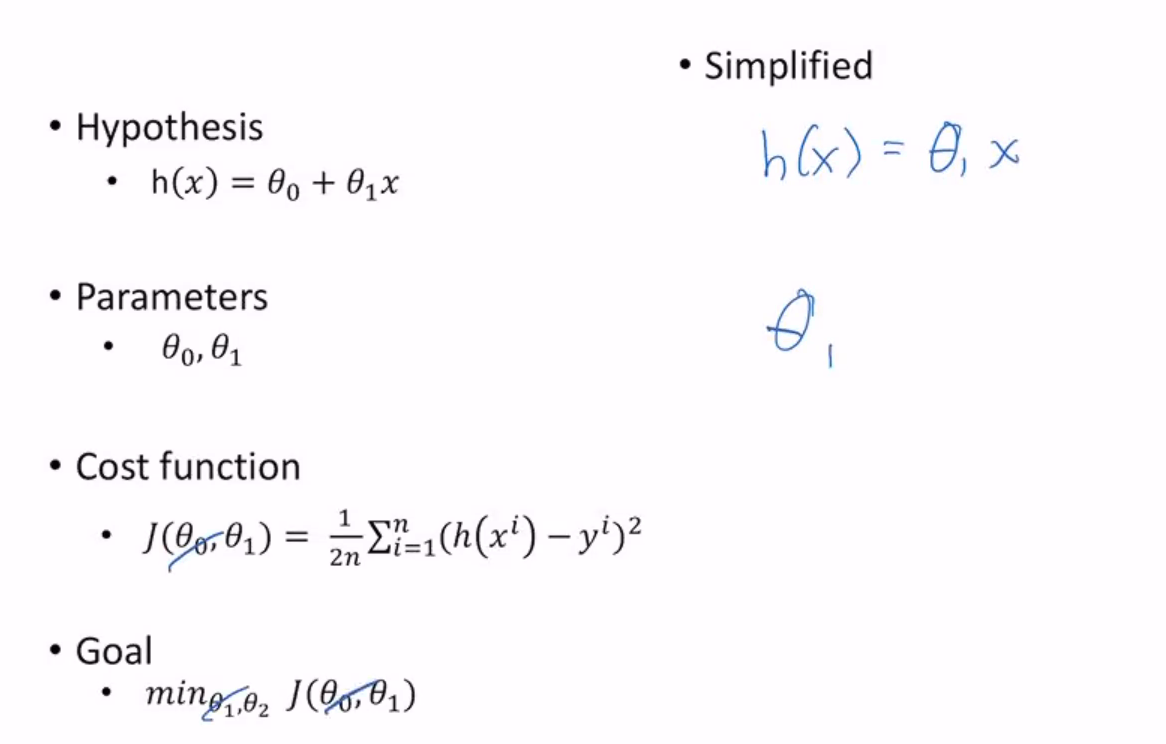
* **Map data X to real value Y**
* **Linear regression, mapping is linear function of X**
  + **X = the independent variable**



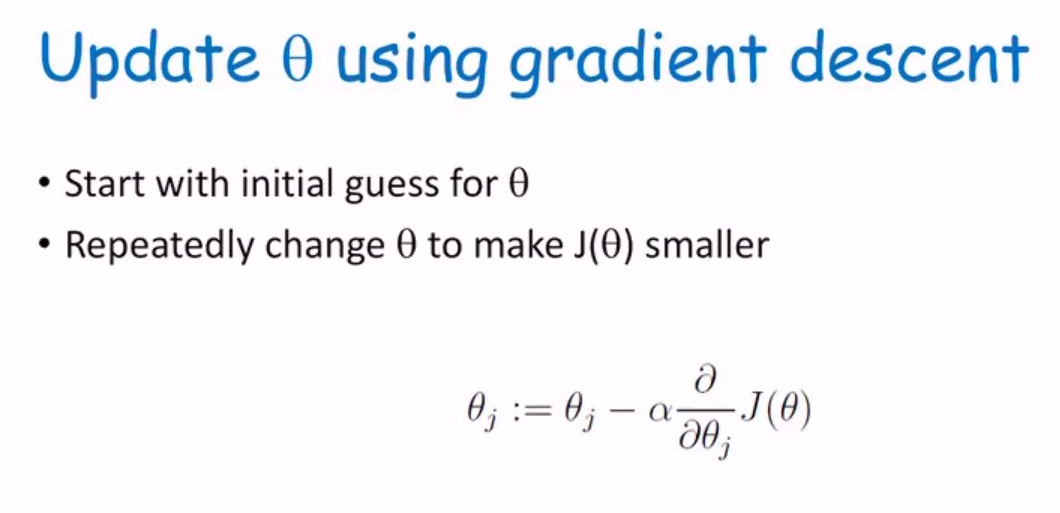


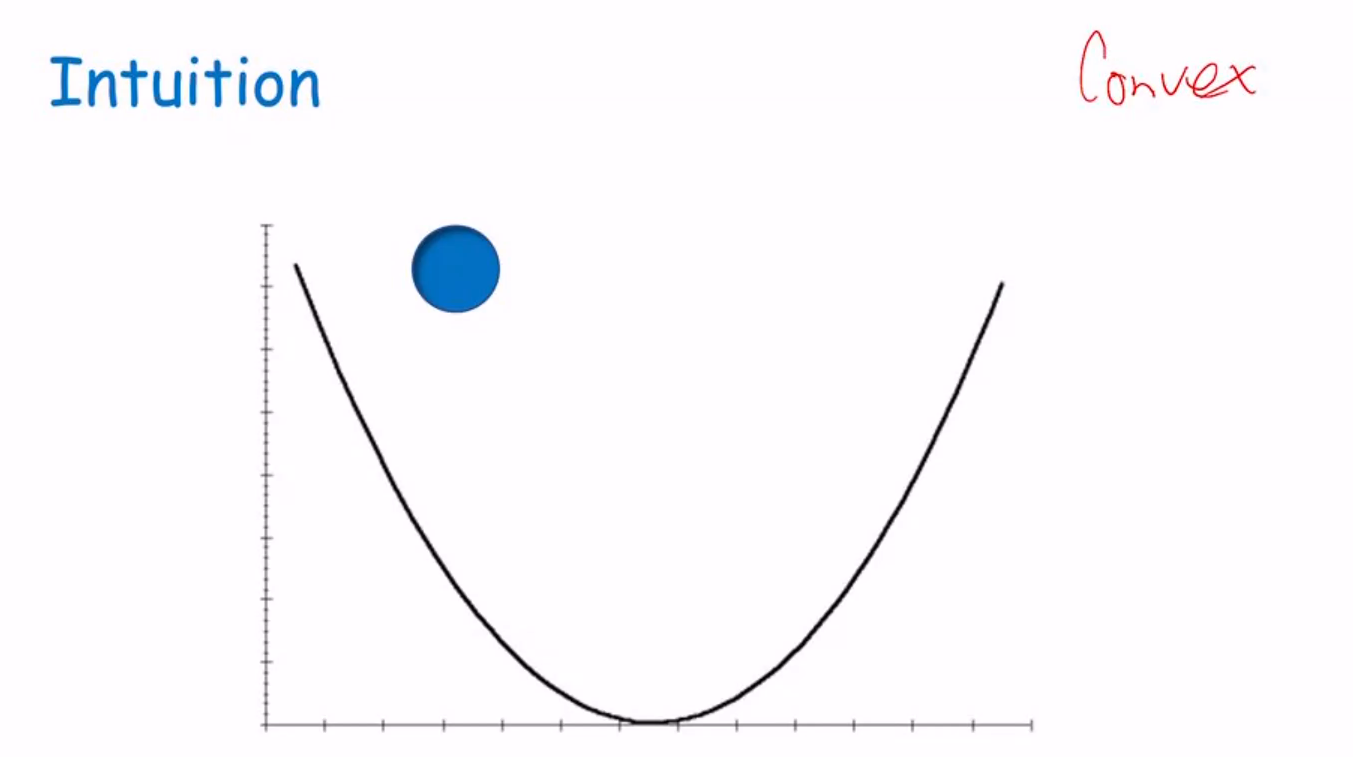
**Lost (cost) function**



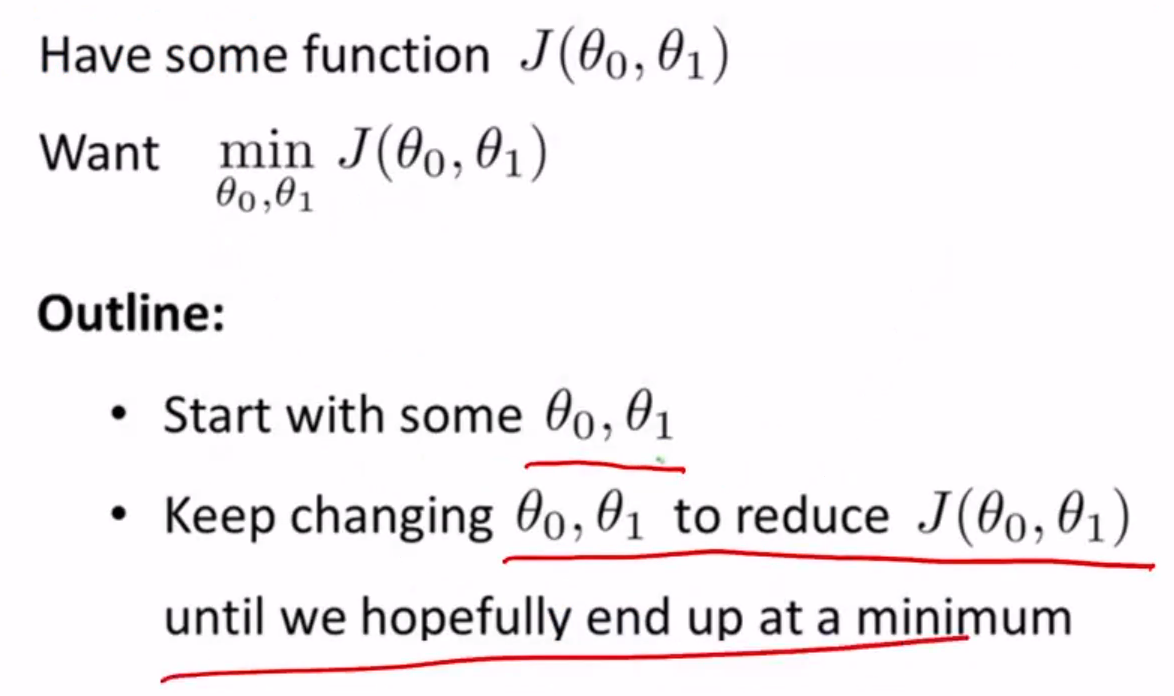


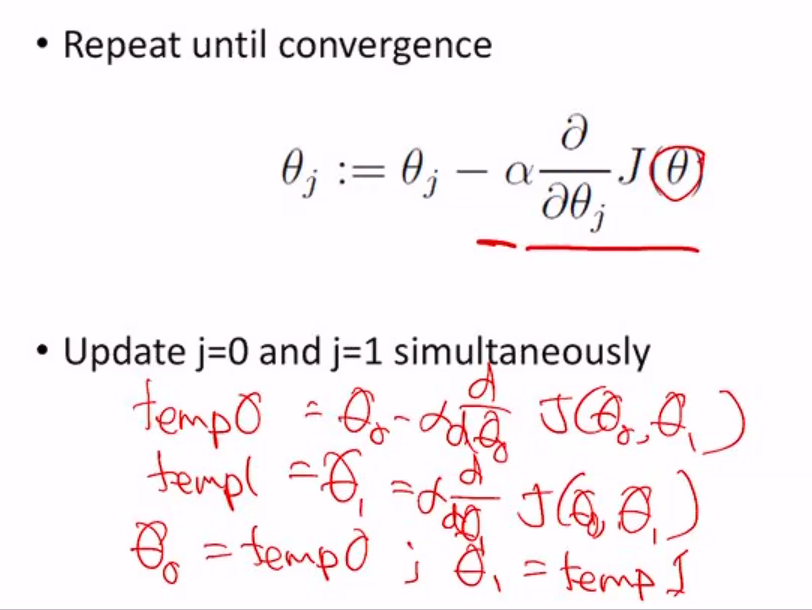
**Gradient Descent**

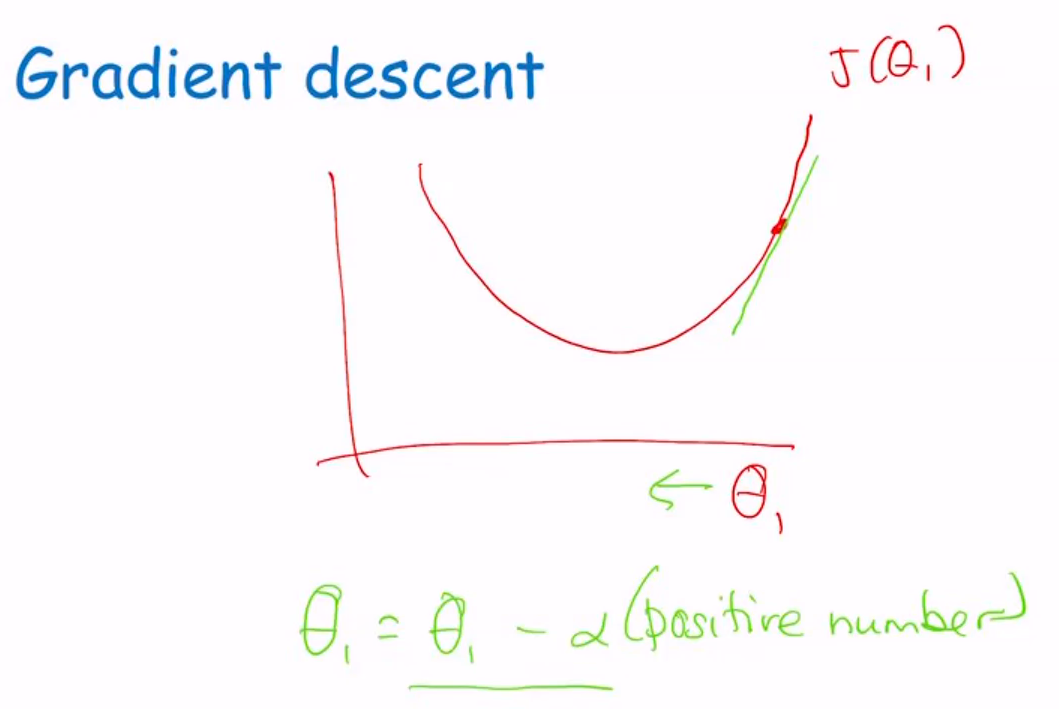


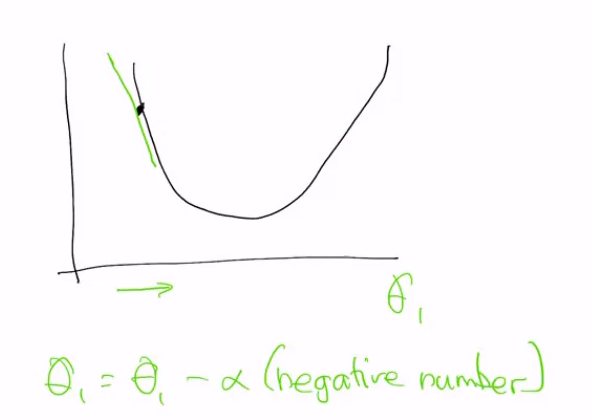


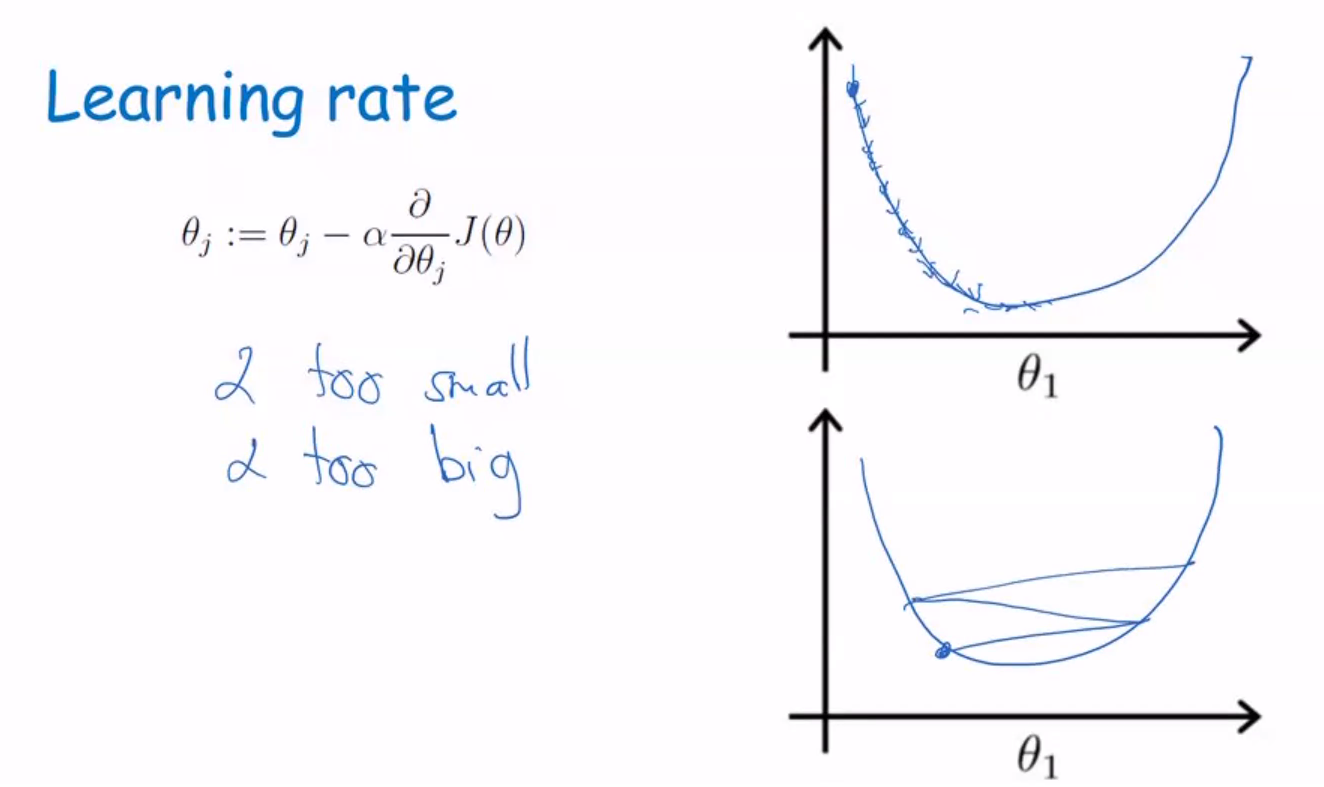
* **Convex Functions – Can expect loss function spaces to work only when convex**











* **If too small it’s slow**
* **If too big it can overshoot**

