|  |  |  |
| --- | --- | --- |
| **Symbol** | **Meaning** | |
| **General** | | |
| *m* | Number of training examples | |
| *n* | Number of features | |
| *i* | The *ith* training example | |
| *h* | Hypothesis | |
| *θ* | Weights / Parameters assigned to a particular feature. Also known as the "coefficients" (i.e. numerical or constant quantity placed before and multiplying the variable in an algebraic function). | |
| *θ0, θ1, ... θn* | Theta 0, 1 to n. | |
| *J* | The cost | |
| *∑* | Sum | |
|  | Sum notation | |
| α | Alpha, the learning rate | |
| **Single Feature** | | |
| *x* | Input variable / feature | |
| *y* | Output variable / target | |
| *(x, y)* | One training example | |
| *(x(i), y(i))* | The *ith* training example | |
| **Multiple Feature** | | |
| *j* | Feature ***j*** | |
| *x(i)* | Input features of the ***ith*** training sample | |
| *xj(i)* | Value of feature ***j*** in ***ith*** training sample | |
|  | | |
| *θ(i)* | | *θ* values corresponding to the ***ith*** training sample |
| *θ j(i)* | | *θ* value corresponding to feature ***j*** the ***ith*** training sample |
|  | | |
| *X* | | All input variables / features (i.e. all samples) |
| *y* | | All output variables / targets (i.e. all samples) |

**Linear Regression (Single + Multiple Variable)**