**Normal equations note**

We want to solve:

Every equation is in the form:

here m=5, n=3

In matrix form:

We need ‘to multiply by inverse’ to solve the equation, but X is not invertible, so we multiply by transpose of X before to receive square matrix that multiplied by

So is square and now we can multiply by its inverse (if it exists):

|  |  |
| --- | --- |
| Matrix/vector | Dimensions |
|  | [mxn] |
|  | [1xm] |
|  | [1xn] |

[**https://stackoverflow.com/questions/34161501/normal-equation-in-linear-regression-return-theta-coefficients-as-nan**](https://stackoverflow.com/questions/34161501/normal-equation-in-linear-regression-return-theta-coefficients-as-nan)