1. Truth table for XOR function is :

|  |  |  |
| --- | --- | --- |
|  |  |  |
| 0 | 0 | 0 |
| 0 | 1 | 1 |
| 1 | 0 | 1 |
| 1 | 1 | 0 |

Overallmatrix can be written as :

matrix can be written as :

Let weights and bias be:

Prediction:

MSE:

Gradient:

Computed weights and bias are:

Based on these weights, and bias the predictions are:

As shown above, the linear regression predicts output as 0.5 always.