

## XOR is Linear or Not ?

### XOR truth table

X	Y	$X \oplus Y$
0	0	0
0	1	1
1	0	1
1	1	0

Threshold value  $\theta = 1$

Activation Function :

$$f(X,Y) = \begin{cases} 1 & \text{if } X \oplus Y \geq 1 \\ 0 & \text{if } X \oplus Y < 1 \end{cases}$$

### Graph:

