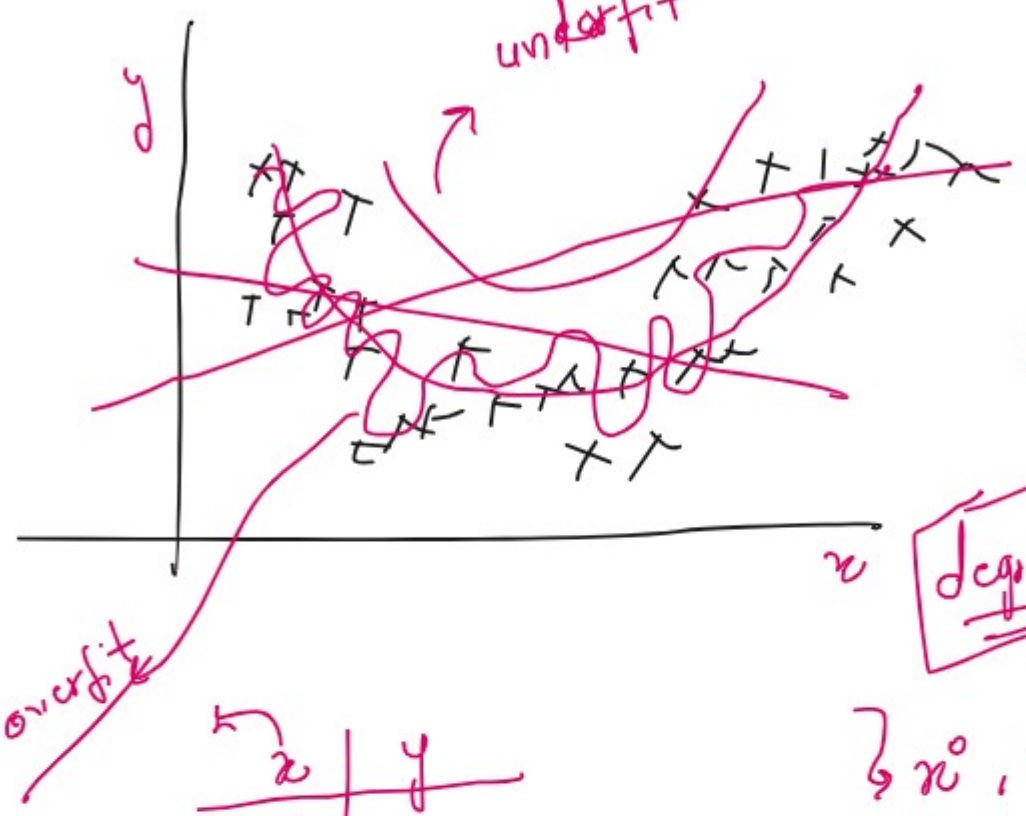
Polynomial Regression



$\Rightarrow$ degree = 2

5°

$y = mx + b$

$\downarrow$

$y = \beta_0 + \beta_1 x$

2-D $\Rightarrow y = \beta_0 + \beta_1 x_1 + \beta_2 x_2$

x^0, x^1, x^2			y
1	5	25	10
1	9	4	6

x^0, x^1, x^2, x^3	y

x	y
5	10
2	6
3	12
1	1
1	

$y = \beta_0 + \beta_1 x_1$

degree=2

$y = \beta_0 + \beta_1 x^0 + \beta_2 x^1 + \beta_3 x^2$

x_1	x_2	y

$\hookrightarrow y = \beta_0 + \underbrace{\beta_1 x_1^0 + \beta_2 x_1^1 + \beta_3 x_1^2}_{x_1} + \underbrace{\beta_4 x_2^0 + \beta_5 x_2^1 + \beta_6 x_2^2}_{x_2}$