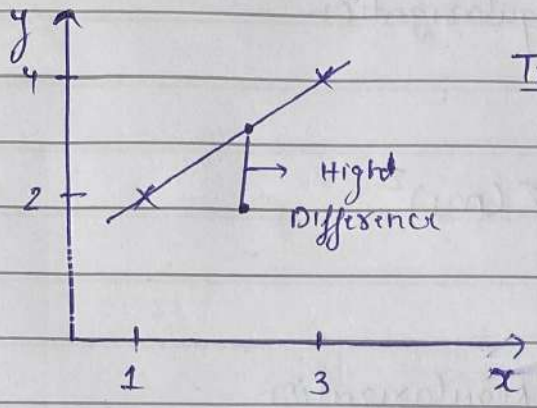
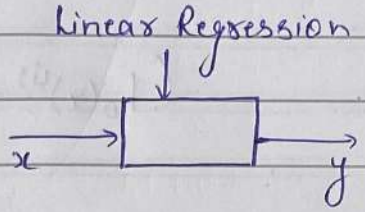
Ridge & Lasso Regression



Training Set

x	y
1	2
3	4



Overfitting

Train Accuracy = 90%

Test Accuracy = 70%

↓

Low Bias

High variance

underfitting

Train Accuracy = 60%

Test Accuracy = 62%

↓

High Bias

High variance

Note: Model should be generalized

Generalized Model

Train Accuracy = 90%

Test Accuracy = 89%

↓

Low Bias

Low Variance

* Ridge Regression : ⟶ l_2 Regularization

$$(h_\theta(x)^{(i)} - y^{(i)})^2 + \lambda \Sigma (m_i)^2$$

* Lasso Regression : ⟶ l_1 Regularization

$$(h_\theta(x)^{(i)} - y^{(i)})^2 + \lambda \Sigma |m_i|$$

Advantage :
⟶ Prevent overfitting
⟶ Feature selection