Question #02

Given Data.

Elastic-net regularizer $= \hat{\theta} = \min \|y - A\theta\|_2^2 + \lambda(\alpha\|\theta\|_2^2 + (1-\alpha)\|\theta\|)$

$\therefore \lambda$ and α = scalar parameters

LASSO model:

$$\theta = \min \|y - A\theta\|_2^2 + \lambda \|\theta\|_1$$

This can be written as:

$$= \min y^T y - 2y^T A\theta + A^T\theta^T A\theta + \lambda\|\theta\| \quad \text{---(2)}$$

$\therefore$ simply opened famula $(a-b)^2$

Now simplifying eq (2), we get:

from eq (2) & eq (3), we calculate

$\hat{\theta} = \min \|\tilde{y} - \tilde{A}\theta\|_2^2 + \lambda\|\theta\|_1$ where

$\tilde{y} = (y,$

$\tilde{A} = ($