CMPS 142: Homework 1

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1. We will prove that for an arbitrary number of examples m, and number of features n, that the Least Sqares cost function $J(\theta)$ is a convex function of the $n-$dimensional parameter vector θ.

2. Weka Problem

   (a) Model: $y = -0.1343(x_1) + 1.8477(x_2) + -0.8966(x_3) + 4.3608$
   Root mean squared error: 0.1897

   (b) For $\mathbf{x} = [3, 3, 5]$, using the model from (a) we have $\hat{\mathrm{t}} = 5.018$

   (c) $\theta = (4.3608, -0.1343, 1.8477, -0.8966)$

   (d) As long as each instance i, $x^{(i)}$, has the same row index as the corresponding $y^{(i)}$, the data will be the same, and so the resulting regression model will be the same.

3. Problem ...