

Problem 1:

Given the following set of data points

x	0	1	2	3	4	5	6	7	8	9
y	9.45	4.35	3.65	4.20	4.55	6.10	6.90	9.25	11.40	14.26

Find the Least Squares solution $[[Z]^T[Z]]\{c\} = \{[Z]^T\{y\}\}$ to the equation

$$y = c_1 + c_2 \cdot \frac{1}{(x+1)^2} + c_3 \cdot x^2$$

Requirements:

1. You do not have to write a function for this problem
2. $[Z]$ must be defined using a single line of code
3. $\{c\}$ must be defined using a single line of code (use left division)
4. the output should look **very** similar to the following:

The calculated coefficients using Least Squares are:

c1 = #.###

c2 = #.###

c3 = #.###

5. generate a plot showing the raw data points and a smooth curve generated by the Least Squares solution. Use 50 points for x between 0 and 9.

Solution:

The calculated coefficients using Least Squares are:

c1 = 2.1##

c2 = 7.3##

c3 = 0.1##

