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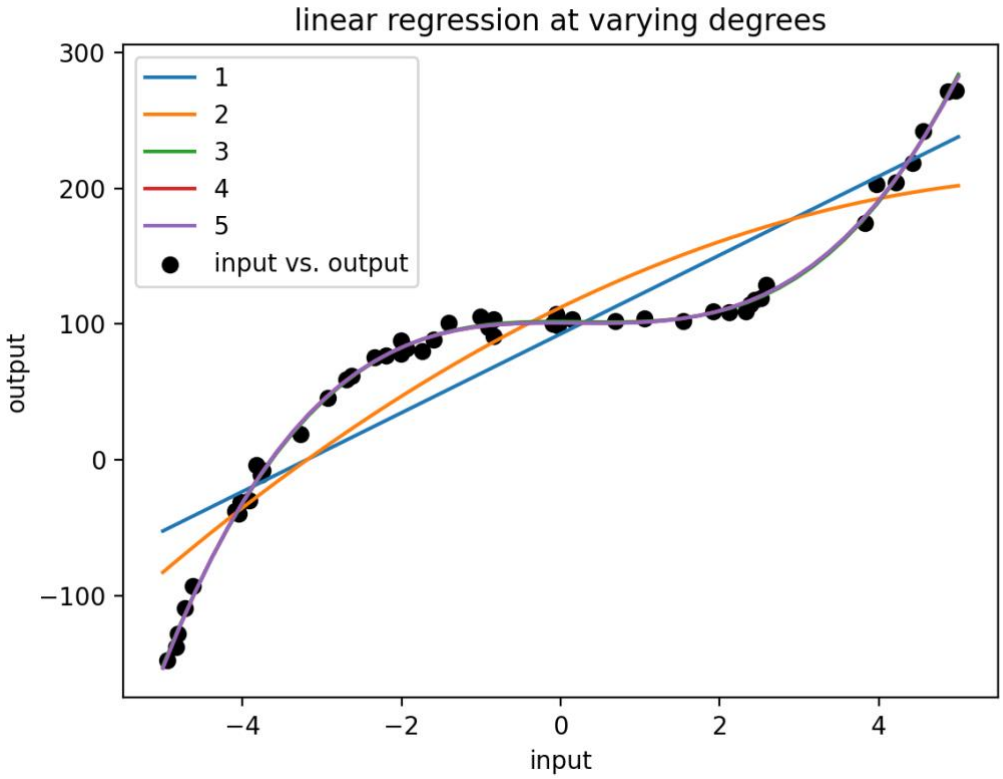
Problem1 Writeup

Estimated Functions:
Y1(x) = 29.05867495x + 92.76756053
Y2(x) = -2.11108454x^2 + 28.50662487x + 112.31481224
Y3(x) = 1.75743661x^3 - 1.43242754x^2 - 0.3307411x + 101.86611055
Y4(x) = -1.51249835e-02x^4 + 1.75412364x^3 -1.08212257x^2 - 2.55843975e-01x + 1.00914532e+02
Y5(x) = -4.45092599e-04x^5 - 1.54226284e-02x^4 + 1.76681929x^3 - 1.07434416x^2 - 3.22742703e-01x + 1.00887487e+02

Data Visualization:



The data best follows a 3rd order polynomial due to low error between the estimated regression function and the data points above.

If we measured a new data point, x = 2, the corresponding predicted value would be 109.534