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Problem1: Polynomial Regression_ writeup

Estimated Functions:

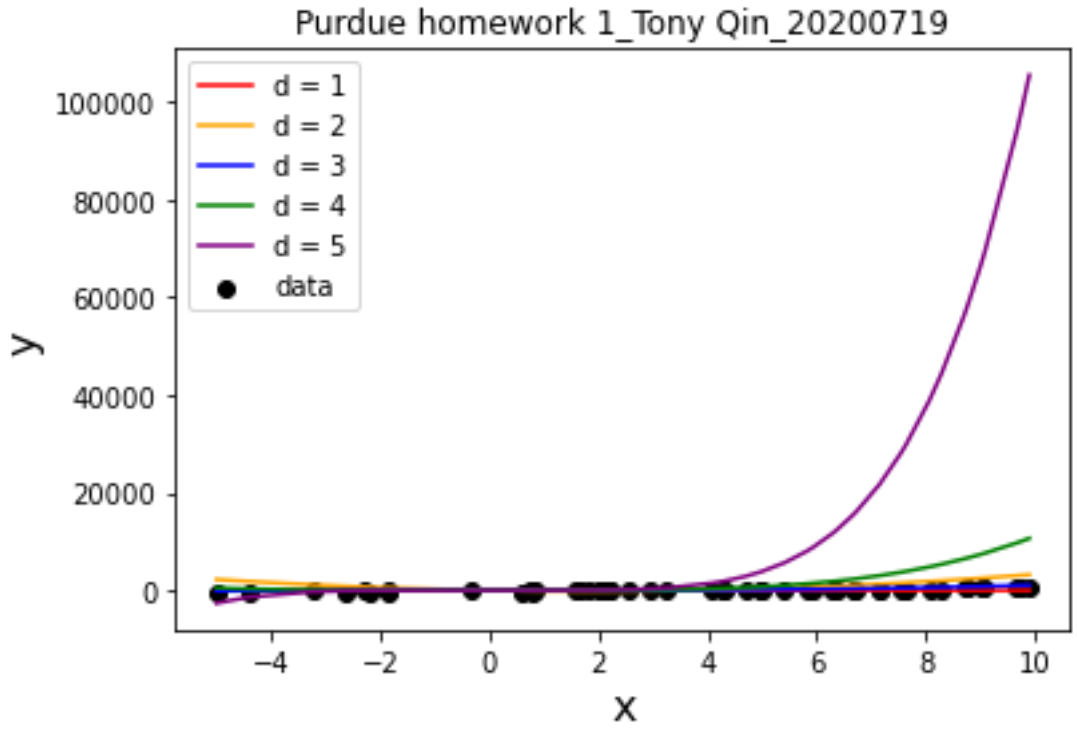
$\widehat{y_1}(x) = 52.1581x - 189.866$

$\widehat{y_2}(x) = 7.00158x^2 + 9.30386x - 239.334$

$\widehat{y_3}(x) = 0.820138x^3 + 0.271767x^2 - 0.0103221x - 175.277$

$\widehat{y_4}(x) = 0.00598796x^4 + 0.755218x^3 + 0.234560x^2 + 1.17636x - 175.880$

$\widehat{y_5}(x) = 0.000853138x^5 - 0.0046982x^4 + 0.752812x^3 + 0.526091x^2 + 0.965906x - 176.837$



The data seems to best follow a third order polynomial (line) which can be seen from the lowest error between the estimated regression function $\widehat{y_3}(x)$, and the data in the plot above.