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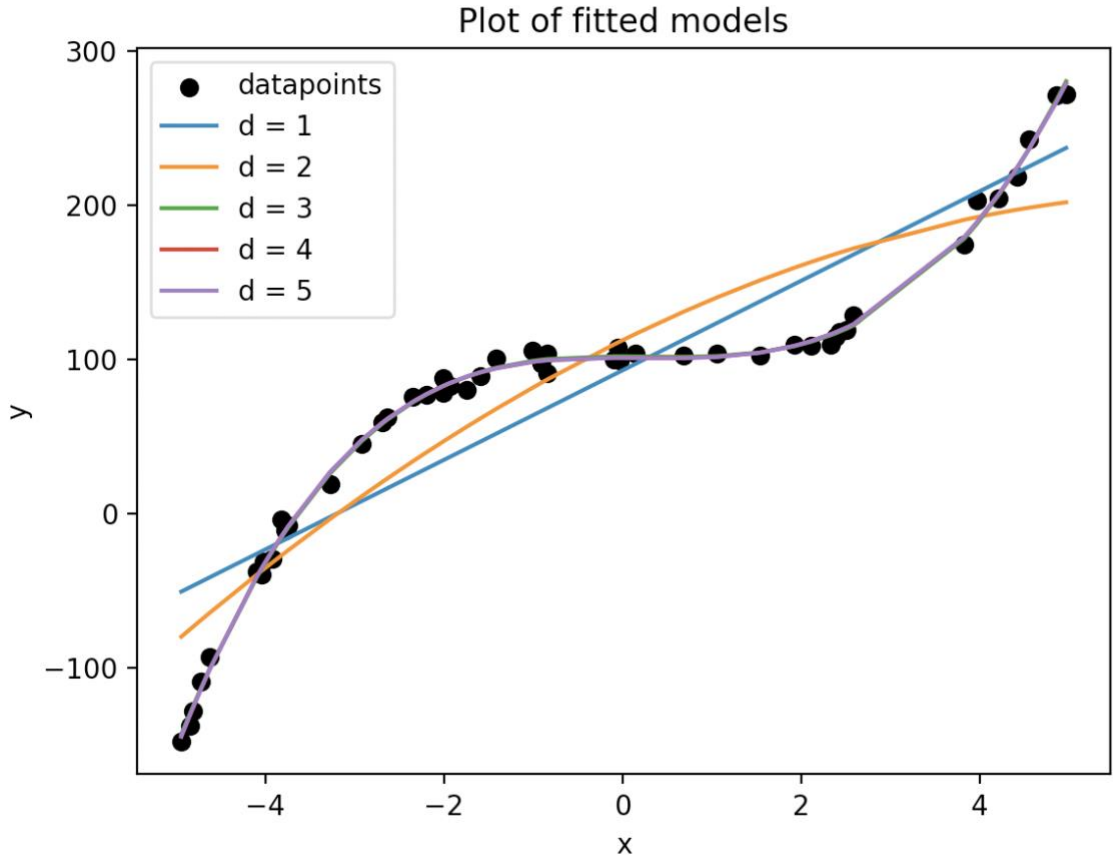
Problem1_writeup

Estimated Functions:

$$\widehat{y_1}(x) = 29.058\,x + 92.767$$
$$\widehat{y_2}(x) = -2.111\,x^2 + 28.506\,x + 112.314$$
$$\widehat{y_3}(x) = 1.757\,x^3 - 1.432\,x^2 - 0.330\,x + 101.866$$
$$\widehat{y_4}(x) = -0.0151x^4 + 1.754\,x^3 - 1.082\,x^2 - 0.256\,x + 100.915$$
$$\widehat{y_5}(x) = (-4.450 * 10^{-4})\,x^5 - 0.0154x^4 + 1.766\,x^3 - 1.074\,x^2 - 0.323\,x + 100.887$$

Data Visualization



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

If we measured a new data point, x = 2, the corresponding predicted value would be $\widehat{y_3}(2) = 109.534$.