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Problem1_writeup

Estimated Functions:

$\widehat{y_1}(x) = a_1x + b$ a1 = 21.99190792 b = 92.70531403

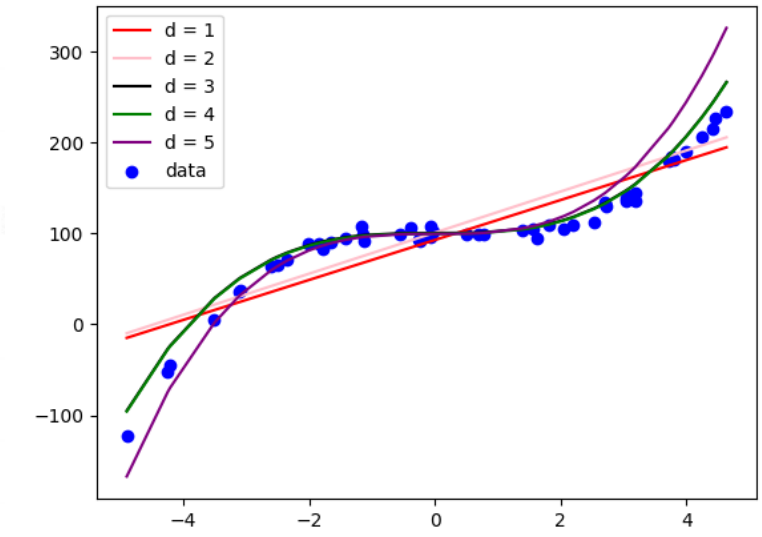
$\widehat{y_2}(x) = a_2x^2 + a_1x + b$ a2 = -2.158 a1 = 22.608 b = 100.799

$\widehat{y_3}(x) = a_3x^3 + a_2x^2 + a_1x + b$ a3 = 1.667 a2 = -1.193 a1 = .3958 b = 100.437

$\widehat{y_4}(x) = a_4x^4 + a_3x^3 + a_2x^2 + a_1x + b$ a4 = -1.434e-2 a3 = 1.668e+00 a2 = -9.0569e-01 a1 = 3.395e-01 b = 9.976e+00

$\widehat{y_5}(x) = a_5x^5 + a_4x^4 + a_3x^3 + a_2x^2 + a_1x + b$ a5 = -2.317e-02 a4 = -1.962e-02 a3 = 2.274e+00 a2 = -8.644e-01 a1 = -2.660e+00 b = 9.941e+01

Data Visualization: *(insert plot obtained from data in poly.txt)*



(Discuss relationship of data and insert numerical value of c calculated from best regression)

With smaller values for the degrees of freedom, the prediction follows more of a line compared to the true data set, and as we increase the number of degrees of freedom our predictions become more accurate.