Q1

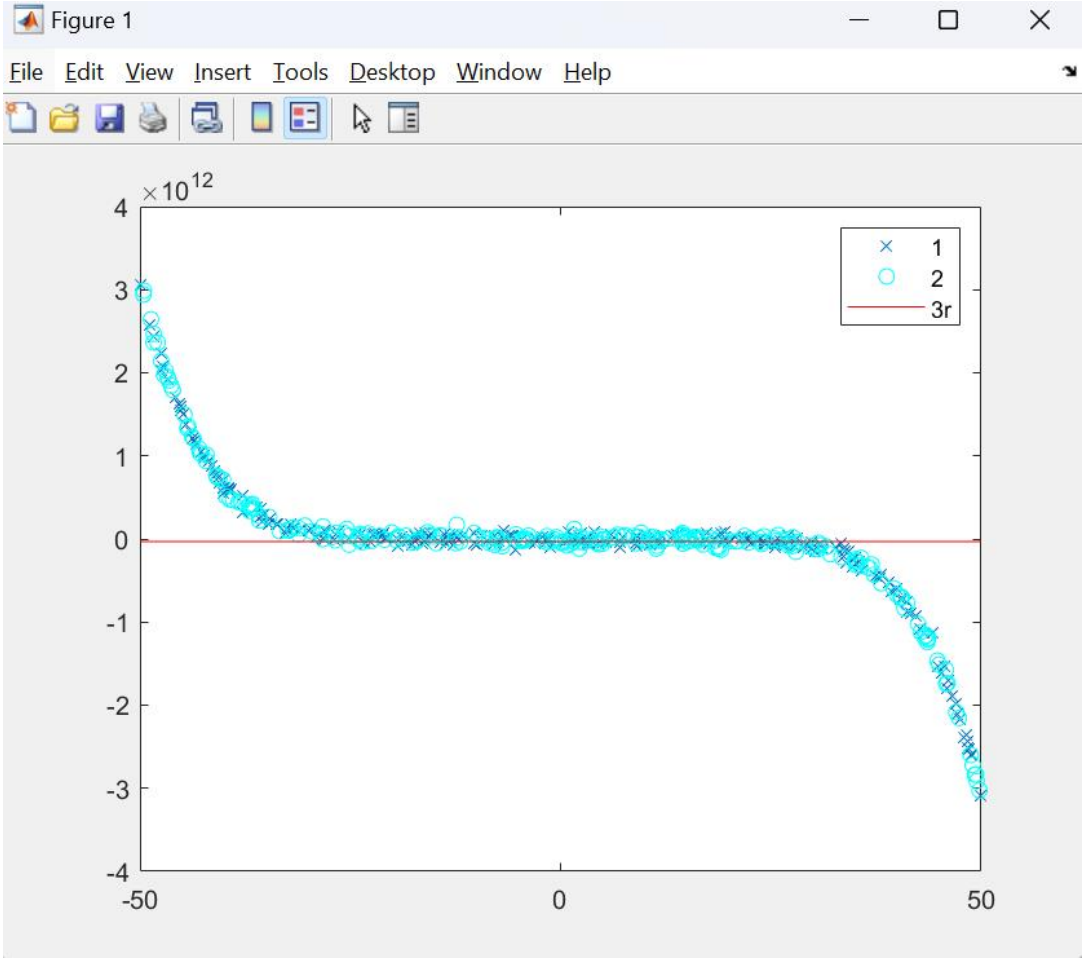
d = 1

Train Error

3.339022682819554e+23

Test Error

3.489373432604476e+23



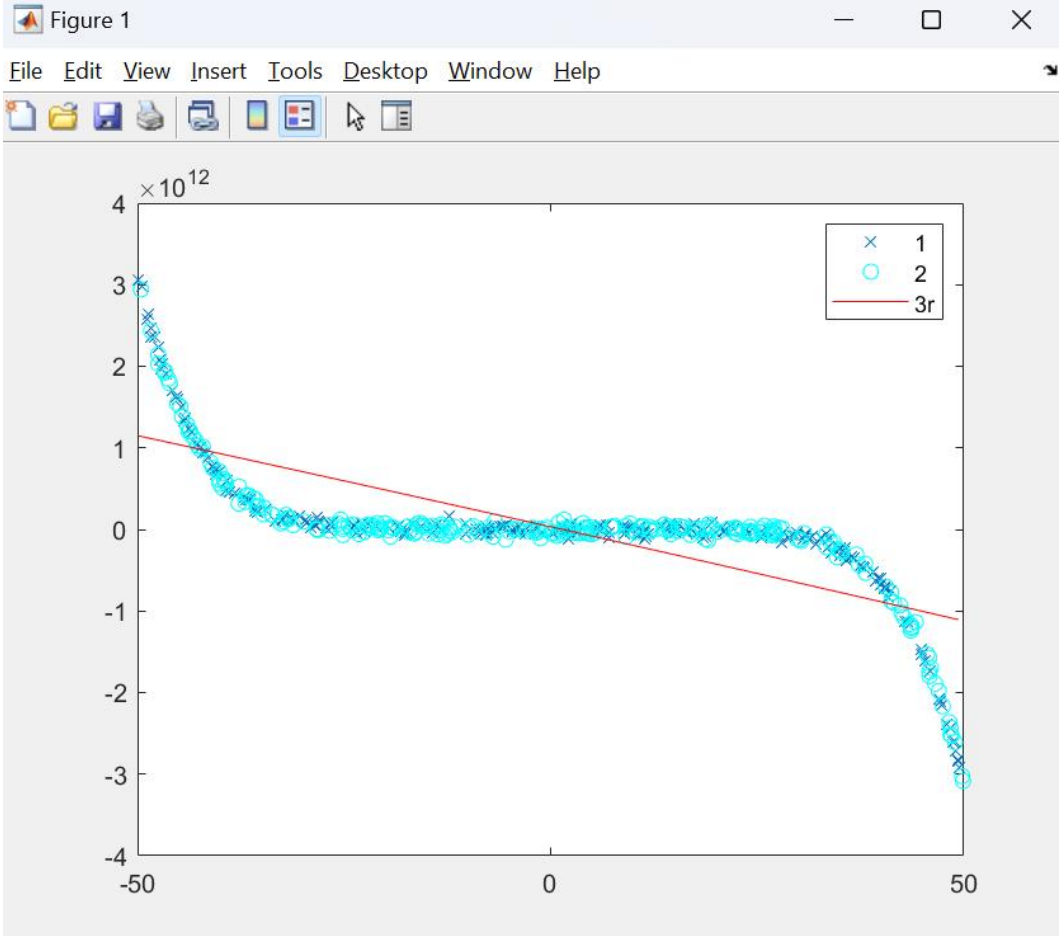
d = 3

Train Error

1.588765977923000e+23

Test Error

1.353609360424602e+23



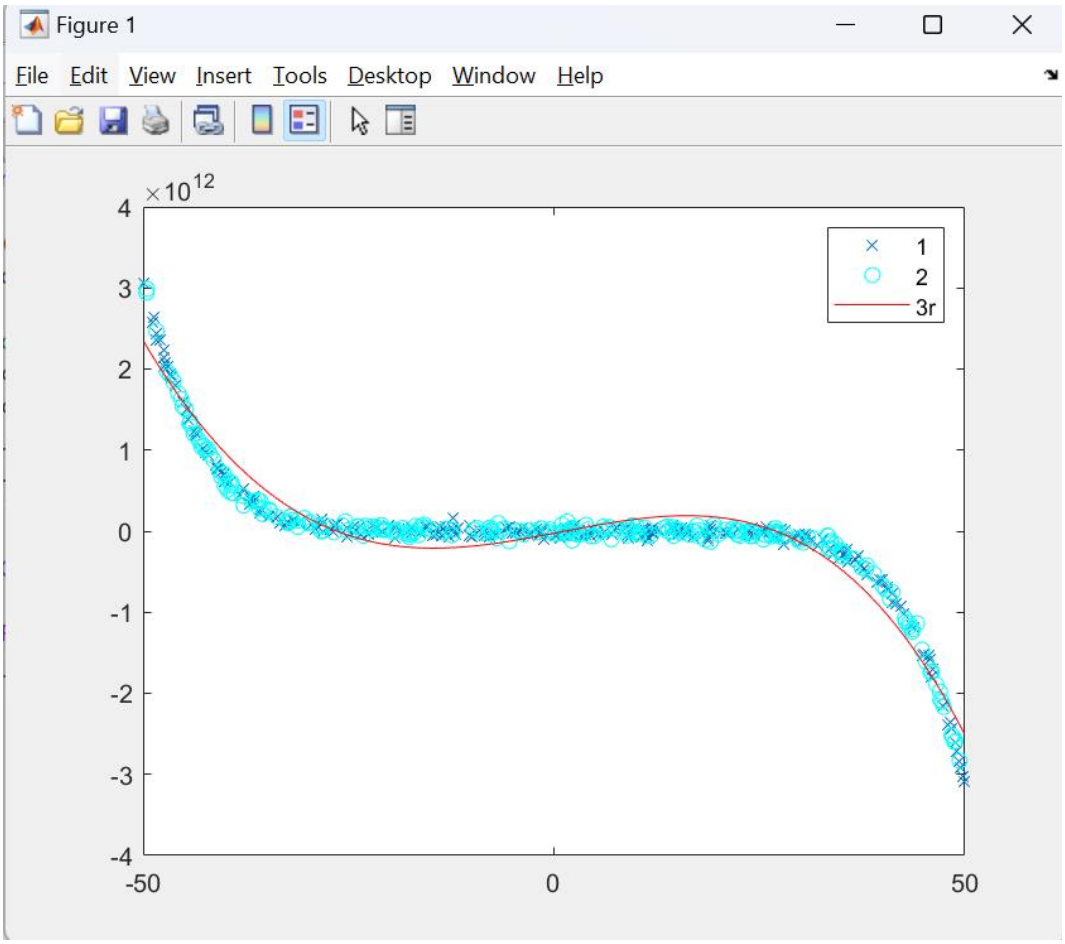
d = 5

Train Error

2.118946150201481e+22

Test Error

1.963448616971719e+22



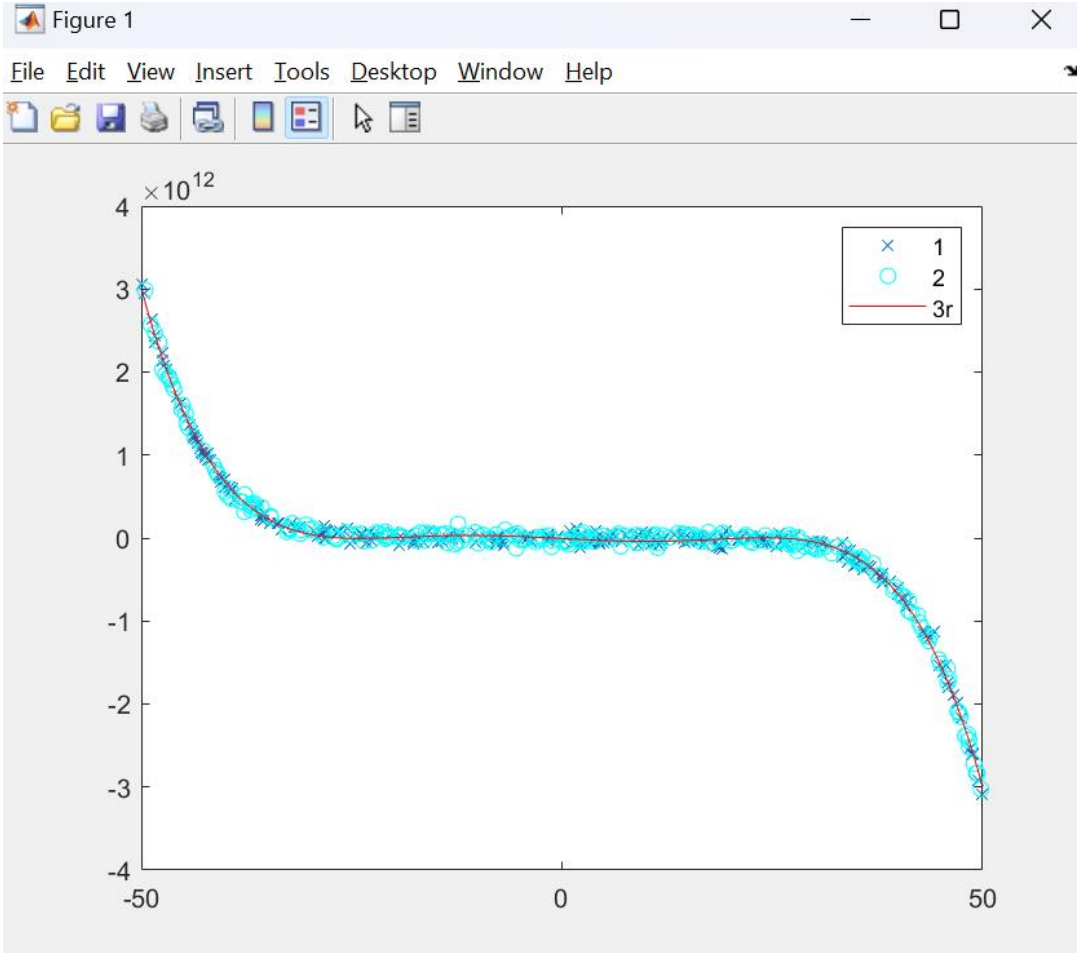
d = 7

Train Error

1.472246867892594e+21

Test Error

1.486794134609314e+21



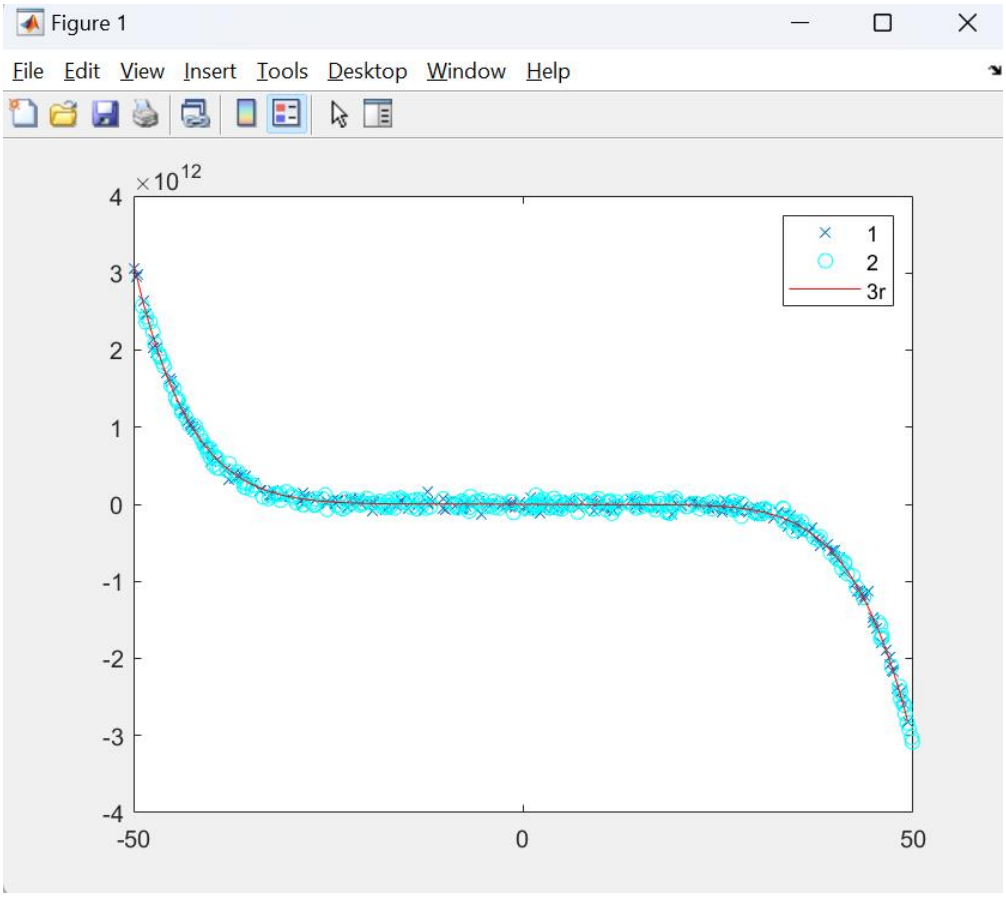
d = 9

Train Error

1.076752630040636e+21

Test Error

1.232261352106984e+21



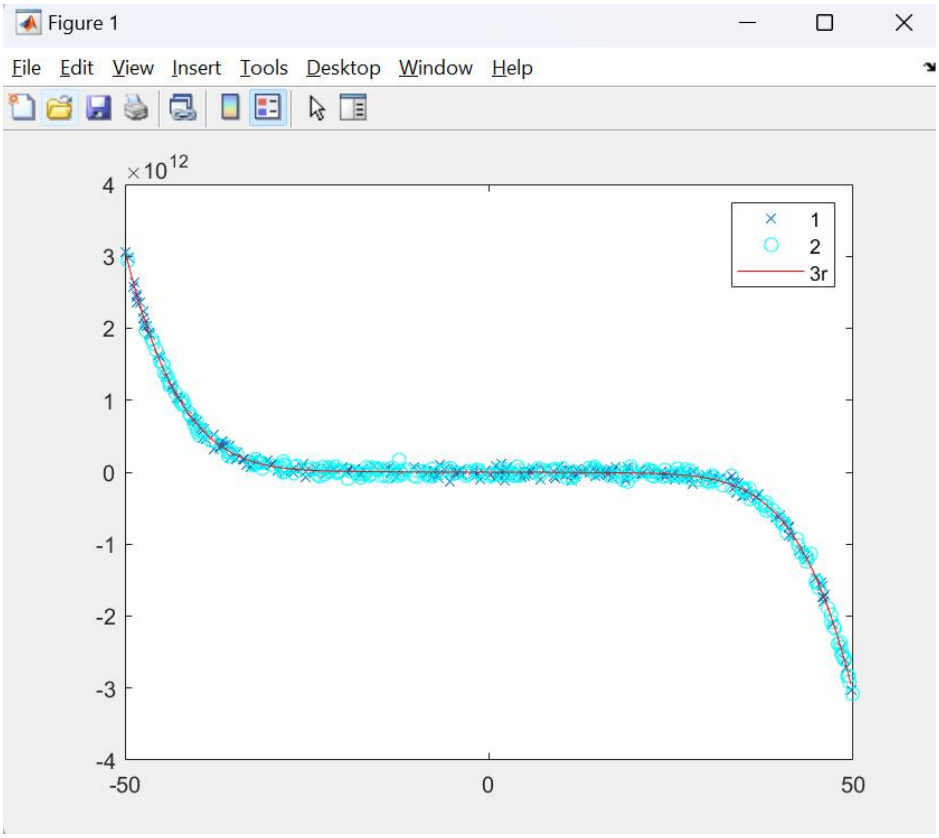
d = 20

Train Error

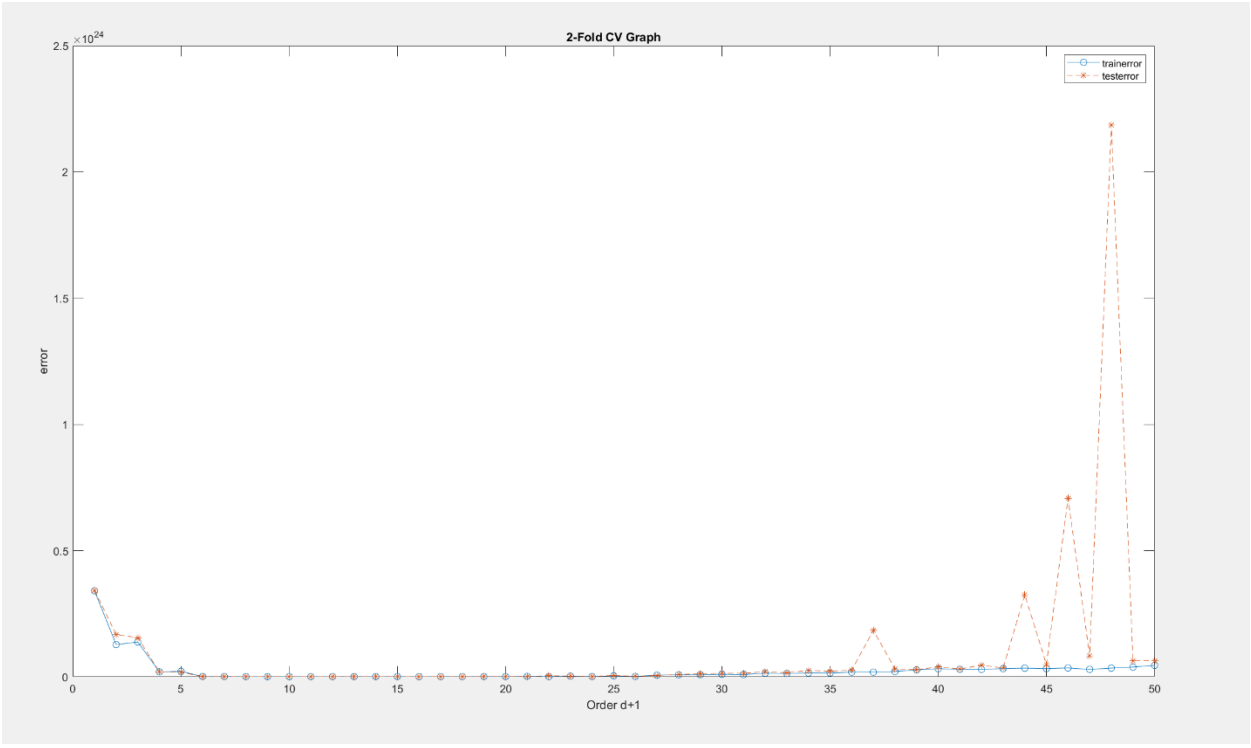
1.134867479358939e+21

Test Error

1.385241315601725e+21



Error- Order Graph



It can be concluded that both train and test errors decrease when d increase, around 9 is the best spot for minimizing errors. However, when d keeps increasing, it causes overfitting,