In this problem, we will use the data in `bias_variance_trade.txt` to gain some intuition into the tradeoff between bias and variance. The first column is one sample of the independent variable x, while the second is the dependent variable y that corresponds to those points. The third and fourth columns are the same for a different sample of the independent variable.

(a) Fit the data from the first two columns using Legendre polynomials of orders 1 through 10. Report the sum of the squared error for each fit. Note: it may be worthwhile to poke around your programming language's package documentation to find a shortcut.

(b) Now fit the data from the third and fourth columns using Legendre Polynomials of orders 1 through 10. Report the sum of the squared error for each fit.

(c) Plot the first set of data and the best-fitting model of that data in one color, then the second set of data and its best-fitting model of that data in another color. How well does one model fit the data used to train the other model? This is the result of a low bias, high-variance model.