### Sample 9b

**Write a MATLAB program as follows:**

**1) Read a data file (sample9a.dat) that has 8 lines, where each line contains**

**a value of x and a value of y (data point).**

**2) For each data point from the second one to the second to last one, fit a**

**second order polynomial to that data point and the data point on either**

**side of it (fit the second order polynomial to three data points). Plot**

**these fitted second order polynomials using the colors red, blue, green,**

**black, magenta and cyan and the data points as black circles, all in the**

**same graph.**

**3) For each data point from the third one to the third to last one, fit a**

**fourth order polynomial to that data point and the two data points on**

**either side of it (fit the fourth order polynomial to five data points).**

**Plot these fitted fourth order polynomials using the colors blue, green,**

**black and magenta and the data points as black circles, all in the same**

**graph.**

**4) For each data point from the fourth one to the fourth to last one, fit a**

**sixth order polynomial to that data point and the three data points on**

**either side of it (fit the sixth order polynomial to seven data points).**

**Plot these fitted sixth order polynomials using the colors green and**

**black and the data points as black circles, all in the same graph.**

**The three graphs should look like the ones on the attached sheets.**