Armaan Sethi
Phys 331

1.

L_0(x) = (x-3)(x-6)*((3)(-6))^(-1)
L_1(x) = (x)(x-6)*((3)(-3))^(-1)
L_2(x) = (x)(x-3)*((6)(3))^(-1)

p(h) = 1.225*L_0 + 0.905*L_1 + 0.652*L_2
p(h) = -0.00680556 (-6 + x) (-3 + x) - 0.100556 (-6 + x) x + 0.0362222 (-3 + x) x

2.

c) The result is much smoother than the original data. The values seem to become continuous.

3.

a) The array is a 41x2 array. (41 rows and 2 columns)

e) It is relatively close to 0, but not that close.

f) From https://docs.scipy.org/doc/scipy/reference/generated/scipy.optimize.leastsq.html
It returns an ndarray that is the solution, or the result of the last iteration of an unsuccessful call. It also returns other useful parameters, such as integer flag that outputs 1,2,3, or 4 when a solution is found.

g) Yes, it is very close to 0. So close that the scale became 1*10^(-7)

h) They match extremely well. It is difficult to tell if they go exactly through the data points, but I believe they are not going through all of the data points.
The best fit numbers are v01= 2.02590000e+04 v02 = 2.05580006e+04