PA 2 :

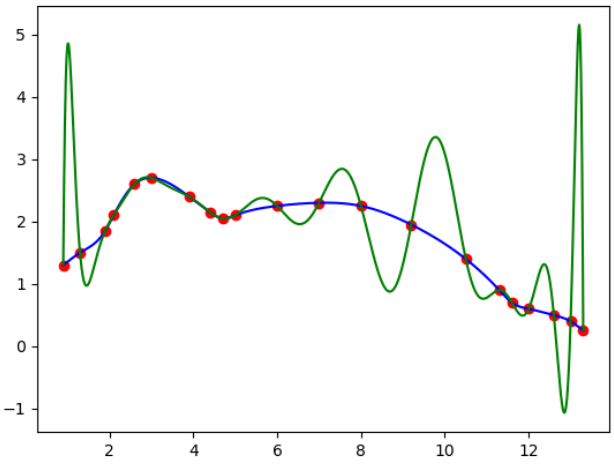
1. The coefficients for the natural cubic spline :

i	x_i	a_i	b_i	c_i	d_i
0	0.9	1.3	0.5396238492562306	0.0	-0.2476490578514421
1	1.3	1.5	0.4207523014875384	-0.29717886942173055	0.9469120930523156
2	1.9	1.85	1.086802718677962	1.407262898072437	-2.956382457311267
3	2.1	2.1	1.294941983029585	-0.36656657631432493	-0.44663477948968966
4	2.6	2.6	0.5933993220979927	-1.0365187455488594	0.44505110075969534
5	3.0	2.7	-0.022191145976440896	-0.5024574246372251	0.17415987014396273
6	3.9	2.4	-0.5034060258736166	-0.032225775248525754	0.07807565399151953
7	4.4	2.15	-0.4770750606285027	0.08488770573875365	1.314171284150477
8	4.7	2.05	-0.07131619046462218	1.267641861474182	-1.5812189034551638
9	5.0	2.1	0.2623398224869929	-0.15545515163546453	0.04311532914847155
10	6.0	2.25	0.08077550666147848	-0.026109164190049883	-0.004666342471428775
11	7.0	2.3	0.01455815086709239	-0.04010819160433621	-0.024449959262756
12	8.0	2.25	-0.13900811012984798	-0.11345806939260421	0.017470689861786695
13	9.2	1.95	-0.33583409646917955	-0.05056358589017213	-0.012727908254745292
14	10.5	1.4	-0.5318299146351858	-0.1002024280836788	-0.02032522327792245
15	11.3	0.9	-0.7311782282626832	-0.14898296395069272	1.213405008680248
16	11.6	0.7	-0.4929486542894339	0.9430815438615265	-0.8392747703448531
17	12.0	0.6	-0.14133530896574226	-0.06404818055229802	0.03638208508459536
18	12.6	0.5	-0.17890047373713686	0.0014395725999735848	-0.4479709706428262
19	13.0	0.4	-0.392774881565715	-0.5361255921714183	0.5956951024126856

2. The coefficients for the interpolating polynomial :

i	$F_{i,i}$
1	0.4999999999999999
2	0.08333333333333372
3	0.6249999999999981
4	-0.9063240680887712
5	0.5668351256586526
6	-0.18391194861782978
7	0.03874690604922625
8	-0.0025481504155956077
9	-0.0018586750299486596
10	0.0005729317636593806
11	-6.34107592999165e-06
12	-4.290233994816249e-05
13	1.5798171679188234e-05
14	-3.453534469332749e-06
15	6.085950046764253e-07
16	-9.860361084436146e-08
17	1.4695484208907752e-08
18	-1.9837133192976805e-09
19	2.5185394950467503e-10
20	-3.0745307801080036e-11

3. The graph in problem 3 :



The red points are the points of the given datas.
The blue line is the plot of the cubic spline.
The green line is the plot of the interpolating polynomial.