3.2. Построить кубический сплайн для функции, заданной в узлах интерполяции, предполагая, что сплайн имеет нулевую кривизну при $x=x_0$ и $x=x_4$. Вычислить значение функции в точке $x=X^*$.

1	X^*	=	1	5
1.	21L	_	1	•

i	0	1	2	3	4
x_i	0.0	1.0	2.0	3.0	4.0
f_{i}	0.0	0.5	0.86603	1.0	0.86603

2. $X^* = 1.5$

	*				
i	0	1	2	3	4
х		1.0	2.0	3.0	4.0
f	1.0	0.86603	0.5	0.0	-0.5

3. $X^* = 1.5$

i	0	1	2	3	4
X_i	0.0	0.9	1.8	2.7	3.6
f_{i}	0.0	0.36892	0.85408	1.7856	6.3138

4. $X^* = 2.66666667$

i	0	1	2	3	4
X_i	1.0	1.9	2.8	3.7	4.6
f_{i}	2.4142	1.0818	0.50953	.11836	-0.24008

5. $X^* = 0.8$

i	0	1	2	3	4
x_i	0.1	0.5	0.9	1.3	1.7
f_{i}	-2.3026	-0.69315	-0.10536	0.26236	0.53063

6. $X^* = -0.5$

i	0	0 1		3	4	
x_i	-2.0	-1.0	0.0	1.0	2.0	
f_i	0.13534	0.36788	1.0	2.7183	7.3891	

7. $X^* = 3.0$

i	0	1	2	3	4
X_i	0.0	1.7	3.4	5.1	6.8
f_i	0.0	1.3038	1.8439	2.2583	2.6077

8. $X^* = 0.1$

i	0	1	2	3	4
X_i	-0.4	-0.1	0.2	0.5	0.8
f_{i}	-0.41152	-0.10017	0.20136	0.52360	0.92730

9. $X^* = 0.1$

i	0	1	2	3	4
X_i	-0.4	-0.1	0.2	0.5	0.8
f_{i}	1.9823	1.6710	1.3694	1.0472	0.64350

10.
$$X^* = -0.5$$

	i	0	1	2	3	4
	X_i	-3.0	-1.0	1.0	3.0	5.0
	f_{i}	-1.2490	-0.78540	0.78540	1.2490	1.3734
11. X*	L					
	i	0	1	2	3	4
	X_i	-3.0	-1.0	1.0	3.0	5.0
	f_{i}	2.8198	2.3562	0.78540	0.32175	0.19740
12. <i>X</i> *	=0.8				1	
	i	0	1	2	3	4
	x_i	0.0	0.5	1.0	1.5	2.0
	f_{i}	0.0	0.97943	1.8415	2.4975	2.9093
13. <i>X</i> *	=1.5					
	i	0	1	2	3	4
	X_{i}	0.0	1.0	2.0	3.0	4.0
	f_{i}	1.0	1.5403	1.5839	2.01	3.3464
14. <i>X</i> *	=1.5					
	i	0	1	2	3	4
	X_{i}	0.0	0.9	1.8	2.7	3.6
	f_{i}	0.0	0.72235	1.5609	2.8459	7.7275
15. <i>X</i> *	=2.66	6666667				
	i	0	1	2	3	4
	x_i	1.0	1.9	2.8	3.7	4.6
	f_{i}	2.8069	1.8279	1.6091	1.5713	1.5663
16. <i>X</i> *	=0.8				•	
	i	0	1	2	3	4
	x_{i}	0.1	0.5	0.9	1.3	1.7
	f_{i}	-2.2026	-0.19315	0.79464	1.5624	2.2306
17. <i>X</i> *	=-0.5					
	i	0	1	2	3	4
	X_i	-2.0	-1.0	0.0	1.0	2.0
	f_{i}	-1.8647	-0.63212	1.0	3.7183	9.3891
18. <i>X</i> *	=3.0					,
	i	0	1	2	3	4
	x_i	0.0	1.7	3.4	5.1	6.8
	f_{i}	0.0	3.0038	5.2439	7.3583	9.4077
19. <i>X</i> *						
	i	0	1	2	3	4
	\mathcal{X}_{i}	-0.4	-0.1	0.2	0.5	0.8
	f_{i}	-0.81152	-0.20017	0.40136	1.0236	1.7273
20. <i>X</i> *					1	
	i	0	1	2	3	4
	X_i	-0.4	-0.1	0.2	0.5	0.8
	f_i	1.5823	1.5710	1.5694	1.5472	1.4435

21. <i>X</i> *	=-0.5					
	i	0	1	2	3	4
	X_i	-3.0	-1.0	1.0	3.0	5.0
	f_{i}	-4.2490	-1.7854	1.7854	4.2490	6.3734
22. X*						
Ī	i	0	1	2	3	4
	X_i	-3.0	-1.0	1.0	3.0	5.0
	f_{i}	-0.18016	1.3562	1.7854	3.3218	5.1974
23. X*	=0.8		1			
	i	0	1	2	3	4
	X_i	0.1	0.5	0.9	1.3	1.7
	f_{i}	10.0	2.0	1.1111	0.76923	0.58824
24. X*	=0.8			•	,	
	i	0	1	2	3	4
	X_i	0.1	0.5	0.9	1.3	1.7
	f_{i}	100.00	4.0	1.2346	0.59172	0.34602
25. X*	=0.8		1			
	i	0	1	2	3	4
	X_i	0.1	0.5	0.9	1.3	1.7
	f_{i}	10.1	2.5	2.0111	2.0692	2.2882
26. X*			l			
	i	0	1	2	3	4
	X_i	0.1	0.5	0.9	1.3	1.7
	f_{i}	100.01	4.2500	2.0446	2.2817	3.2360
27. X*	=1.5			•	,	
	i	0	1	2	3	4
	X_i	0.0	1.0	2.0	3.0	5.0
	f_{i}	0.0	0.26180	0.90690	1.5708	1.3090
28. <i>X</i> *	=1.5					
	i	0	1	2	3	4
	X_i	0.0	1.0	2.0	3.0	5.0
	f_{i}	0.0	0.45345	0.52360	0.0	-2.2672
29. <i>X</i> *	=-0.5					
	i	0	1	2	3	4
	X_i	-2.0	-1.0	0.00	1.0	2.0
	f_{i}	-0.27067	-0.36788	0.00	2.7183	14.778
30. <i>X</i> *	=-0.5					
	i	0	1	2	3	4
	X_i	-1.2	-0.7	-0.2	0.3	0.8
	f_{i}	0.43372	0.24333	0.32749E-0	0.12149	1.4243