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	$\mathbf{v}^*$	_ 1	5
1.	Λ	=1.	J

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. $X^* = 1.5$

1.0					
i	0	1	2	3	4
$X_{i}$	0.0	1.0	2.0	3.0	4.0
$f_{i}$	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
$\mathcal{X}_{i}$	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	1	2	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*						
11. A	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> *						
12. 11	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> *	L					
10. 11	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. X*						
	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					<u></u>
	i	0	1	2	3	4
	$\mathcal{X}_{i}$	-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> *						
	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	-0.4	-0.1	0.2	0.5	0.8
	$X_i$					
	$f_i$	-0.81152	-0.20017	0.40136	1.0236	1.7273
20. <i>X</i> *		0	1	2	2	1
	i	-0.4	-0.1	0.2	0.5	0.8
	$X_i$	1.5823		1.5694	1.5472	1.4435
	$f_i$	1.3023	1.5710	1.3094	1.34/4	1.4433

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*	=-0.5		I.	•	1	
	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. <i>X</i> *	=0.8					
	i	0	1	2	3	4
	$X_i$	0.1	0.5	0.9	1.3	1.7
	$f_{i}$	10.0	2.0	1.1111	0.76923	0.58824
24. <i>X</i> *						
	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. <i>X</i> *	=0.8					
	i	0	1	2	3	4
	$X_{i}$	0.1	0.5	0.9	1.3	1.7
	$f_{i}$	10.1	2.5	2.0111	2.0692	2.2882
26. <i>X</i> *	=0.8					
	i	0	1	2	3	4
	$x_i$	0.1	0.5	0.9	1.3	1.7
	$f_{i}$	100.01	4.2500	2.0446	2.2817	3.2360
27. <i>X</i> *					<u>,                                      </u>	
	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	<u> </u>				
	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-01	0.12149	1.4243