3.4. Вычислить первую и вторую производную от таблично заданной функции $y_i = f(x_i)$, $\mathrm{i} = 0,1,2,3,4$ в точке $x = X^*$.

1. $X^* = 1.0$

i	0	1	2	3	4
x_i	-1.0	0.0	1.0	2.0	3.0
y_i	-0.5	0.0	0.50	0.86603	1.0

2. $X^* = 1.0$

i	0	1	2	3	4
x_i	-1.0	0.0	1.0	2.0	3.0
y_i	-0.5	0.0	0.5	0.86603	1.0

3. $X^* = 2.0$

i	0	1	2	3	4
x_i	1.0	1.5	2.0	2.5	3.0
y_i	0.0	0.40547	0.69315	0.91629	1.0986

4. $X^* = 0.2$

i	0	1	2	3	4
x_i	0.0	0.1	0.2	0.3	0.4
y_i	1.0	1.1052	1.2214	1.3499	1.4918

5. $X^* = 2.0$

i	0	1	2	3	4
x_i	0.0	1.0	2.0	3.0	4.0
y_i	0.0	1.0	1.4142	1.7321	2.0

6. $X^* = 0.2$

i	0	1	2	3	4
x_i	-0.2	0.0	0.2	0.4	0.6
y_i	-0.20136	0.0	0.20136	0.41152	0.64350

7. $X^* = 0.2$

i	0	1	2	3	4
x_i	-0.2	0.0	0.2	0.4	0.6
y_i	1.7722	1.5708	1.3694	1.1593	0.9273

8. $X^* = 1.0$

i	0	1	2	3	4
x_i	-1.0	0.0	1.0	2.0	3.0
y_i	-0.7854	0.0	0.78540	1.1071	1.249

9. $X^* = 1.0$

i	0	1	2	3	4
x_i	-1.0	0.0	1.0	2.0	3.0
y_i	2.3562	1.5708	0.7854	0.46365	0.32175

10. $X^* = 1.0$

i	0	1	2	3	4
x_i	0.0	0.5	1.0	1.5	2.0
y_i	0.0	0.97943	1.8415	2.4975	2.9093

11. $X^* = 1.0$

i	0	1	2	3	4
x_i	0.0	0.5	1.0	1.5	2.0
y_i	1.0	1.3776	1.5403	1.5707	1.5839

12. $X^* = 0.2$

i	0	1	2	3	4
x_i	-1.0	-0.4	0.2	0.6	1.0
y_i	-1.4142	-0.55838	0.27870	0.84008	1.4142

13. $X^* = 0.8$

i	0	1	2	3	4
x_i	0.2	0.5	0.8	1.1	1.4
y_i	12.906	5.5273	3.8777	3.2692	3.0319

14. $X^* = 3.0$

i	0	1	2	3	4
x_i	1.0	2.0	3.0	4.0	5.0
y_i	1.0	2.6931	4.0986	5.3863	6.6094

15. $X^* = 0.4$

i	0	1	2	3	4
x_i	0.0	0.2	0.4	0.6	0.8
y_i	1.0	1.4214	1.8918	2.4221	3.0255

16. $X^* = 2.0$

i	0	1	2	3	4
x_i	0.0	1.0	2.0	3.0	4.0
y_i	0.0	2.0	3.4142	4.7321	6.0

17. $X^* = 0.2$

i	0	1	2	3	4
x_i	-0.2	0.0	0.2	0.4	0.6
y_i	-0.40136	0.0	0.40136	0.81152	1.2435

18. $X^* = 0.2$

i	0	1	2	3	4
x_i	-0.2	0.0	0.2	0.4	0.6
y_i	1.5722	1.5708	1.5694	1.5593	1.5273

19. $X^* = 1.0$

i	0	1	2	3	4
x_i	-1.0	0.0	1.0	2.0	3.0
y_i	-1.7854	0.0	1.7854	3.1071	4.249

20. $X^* = 1.0$

i	0	1	2	3	4
x_i	-1.0	0.0	1.0	2.0	3.0
y_i	1.3562	1.5708	1.7854	2.4636	3.3218

21. $X^* = 2.0$

i	0	1	2	3	4
x_i	1.0	1.5	2.0	2.5	3.0
y_i	1.0	0.66667	0.50	0.40	0.33333

22. $X^* = 1.4$

i	0	1	2	3	4
x_i	1.0	1.2	1.4	1.6	1.8
y_i	1.0	0.69444	0.5102	0.39062	0.30864

23. $X^* = 2.0$

i	0	1	2	3	4
x_i	1.0	1.5	2.0	2.5	3.0
y_i	2.0	2.1667	2.5	2.9	3.3333

24. $X^* = 1.4$

i	0	1	2	3	4
x_i	1.0	1.2	1.4	1.6	1.8
y_i	2.0	2.1344	2.4702	2.9506	3.5486

25. $X^* = 2.0$

i	0	1	2	3	4
x_i	0.0	1.0	2.0	3.0	4.0
y_i	0.0	0.5	1.7321	3.0	3.4641

26. $X^* = 2.0$

i	0	1	2	3	4
x_i	0.0	1.0	2.0	3.0	4.0
y_i	0.0	0.86603	1.0	0.0	-2.0

27. $X^* = 0.0$

i	0	1	2	3	4
x_i	-1.0	-0.5	0.0	0.5	1.0
y_i	-0.36788	-0.30327	0.0	0.82436	2.7183

28. $X^* = 0.4$

i	0	1	2	3	4
x_i	0.0	0.2	0.4	0.6	0.8
y_i	0.0	0.048856	0.23869	0.65596	1.4243

29. $X^* = 1.0$

i	0	1	2	3	4
x_i	-1.0	0.0	1.0	2.0	3.0
y_i	-0.5	0.0	0.5	0.86603	1.0

30. $X^* = 2.0$

i	0	1	2	3	4
x_i	0.0	1.0	2.0	3.0	4.0
y_i	0.0	0.5	0.86603	1.0	0.86603