

Лабораторная №3

Вариант №3

Выполнил студент группы Р3212 Балин Артем

```
In [ ]: from lab3 import square_approximation
        from util import Printing
        def f(x):
            return (x**4)/4+x**2-8*x+12

        a = 0
        b = 2
        e = 0.0001
        dx = 1
        func = square_approximation(a,b,e,f,dx)
```

```
In [ ]: S = func.main(a)
        results = func.result
        approximation_x = results[-1][-4]
        approximation_f = results[-1][-3]
        print("Square approximation method: x = ", approximation_x)
        print("f(x) = ", approximation_f)
        print()
        answer = Printing(result=results,parameters=["x1", "x2", "x3", "f1", "f2", "f3", "xmin", "Fmin", "Числ.", "Знамен.", "x*", "f(x*)", "Усл.1", "Усл.2"])
        answer.print_result()
```

Square approximation method: x = 1.670241078666522

f(x) = 3.3733904921575437

k	x1	x2	x3	f1	f2	f3	xmin	Fmin	Числ.	Знамен.	x*	f(x*)	Усл.1	Усл.2
1	0.0000	1.0000	2.0000	12.0000	5.2500	4.0000	2.0000	4.0000	-19.0000	-11.0000	1.7273	3.3906	False	False
2	1.0000	1.7273	2.0000	5.2500	3.3906	4.0000	1.7273	3.3906	-3.0990	-1.9007	1.6304	3.3815	False	False
3	1.0000	1.6304	1.7273	5.2500	3.3815	3.3906	1.6304	3.3815	-0.6225	-0.3733	1.6677	3.3734	False	False
4	1.6304	1.6677	1.7273	3.3815	3.3734	3.3906	1.6677	3.3734	-0.0037	-0.0022	1.6699	3.3734	True	False
5	1.6677	1.6699	1.7273	3.3734	3.3734	3.3906	1.6699	3.3734	-0.0001	-0.0001	1.6702	3.3734	True	False
6	1.6699	1.6702	1.7273	3.3734	3.3734	3.3906	1.6702	3.3734	-0.0000	-0.0000	1.6702	3.3734	True	True