**Методы многомерной оптимизации**

**Метод Ньютона**

**Задача 2**. Минимизировать в *Е3* функцию

*f(x1, x2, x3)*=*(x1+α+x2)4+(x1+β+ x3)2+(x2+γ+x3)4*→*min*

**методом Ньютона**, завершив вычисления при *│∂f(x(k))/∂xi*│≤0,05, ***i***=1, 2, 3.

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| **№**  **варианта** | **α** | **β** | **γ** | ***x1(0)*** | ***x2(0)*** | ***x3(0)*** |
| **1** | 64 | 87 | 3 | -72 | 12 | -15 |
| **2** | 66 | 69 | 11 | -64 | -6 | -5 |
| **3** | 21 | 86 | 67 | -22 | 1 | -64 |
| **4** | 51 | 45 | 88 | -6 | -45 | -43 |
| **5** | 79 | 20 | 27 | -34 | -45 | 18 |
| **6** | 32 | 40 | 10 | -29 | 1 | -11 |
| **7** | 66 | 82 | 18 | -63 | -3 | -19 |
| **8** | 52 | 30 | 54 | -12 | -40 | 36 |
| **9** | 63 | 82 | 75 | -33 | -26 | -49 |
| **10** | 48 | 69 | 55 | -29 | -15 | -40 |
| **11** | 72 | 85 | 19 | -71 | -1 | -14 |
| **12** | 50 | 91 | 55 | -41 | -9 | -50 |
| **13** | 49 | 78 | 67 | -28 | -21 | -46 |
| **14** | 98 | 11 | 93 | -11 | -87 | 0 |
| **15** | 52 | 31 | 25 | -31 | -25 | 0 |
| **16** | 11 | 43 | 96 | 20 | -30 | -66 |
| **17** | 68 | 81 | 35 | -55 | -9 | -26 |
| **18** | 50 | 99 | 63 | -45 | -5 | -58 |
| **19** | 19 | 60 | 43 | -20 | 1 | -40 |
| 20 | 31 | 25 | 72 | 10 | -37 | -35 |