

Вид функции	Промежуток нахождения решения
$\text{Ln}(x)\cos(3x-15)$	$x \in [1, 10]$

Результаты работы программы

IIIar: 1

Phenotype: 100000001111111 | X = 9.200704821440787 | f(X) = 2.2178625416469404 (extr: maximum)

IIIar: 2

Phenotype: 111000101111111 | X = 9.191215745053327 | f(X) = 2.2181894906264343 (extr: maximum)

IIIar: 3

Phenotype: 111001011111111 | X = 9.191215745053327 | f(X) = 2.2181894906264343 (extr: maximum)

IIIar: 4

Phenotype: 110111011111111 | X = 9.196815907142767 | f(X) = 2.2182142145125066 (extr: maximum)

IIIar: 5

Phenotype: 100010100111111 | X = 9.194553119159803 | f(X) = 2.218279692555685 (extr: maximum)

IIIar: 6

Phenotype: 100010110111111 | X = 9.194553119159803 | f(X) = 2.218279692555685 (extr: maximum)

IIIar: 7

Phenotype: 110101011111111 | X = 9.194553119159803 | f(X) = 2.218279692555685 (extr: maximum)

IIIar: 8

Phenotype: 101111111111111 | X = 9.194553119159803 | f(X) = 2.218279692555685 (extr: maximum)

IIIar: 9

Phenotype: 111000011111111 | X = 9.194553119159803 | f(X) = 2.218279692555685 (extr: maximum)

IIIar: 10

Phenotype: 100011100111111 | X = 9.194209428293147 | f(X) = 2.218280684699581 (extr: maximum)

IIIar: 11

Phenotype: 100000001111111 | X = 9.194209428293147 | f(X) = 2.218280684699581 (extr: maximum)

IIIar: 12

Phenotype: 111001101111111 | X = 9.194209428293147 | f(X) = 2.218280684699581 (extr: maximum)

IIIar: 13

Phenotype: 100000011111111 | X = 9.194209428293147 | f(X) = 2.218280684699581 (extr: maximum)

IIIar: 14

Phenotype: 111001011111111 | X = 9.194209428293147 | f(X) = 2.218280684699581 (extr: maximum)

IIIar: 15

Phenotype: 111001101111111 | X = 9.194209428293147 | f(X) = 2.218280684699581 (extr: maximum)

IIIar: 16

Phenotype: 110110011111111 | X = 9.194209428293147 | f(X) = 2.218280684699581 (extr: maximum)

IIIar: 17

Phenotype: 110100001111111 | X = 9.194209428293147 | f(X) = 2.218280684699581 (extr: maximum)

IIIar: 18

Phenotype: 110110101111111 | X = 9.194209428293147 | f(X) = 2.218280684699581 (extr: maximum)

IIIar: 19

Phenotype: 100000111111111 | X = 9.194209428293147 | f(X) = 2.218280684699581 (extr: maximum)

IIIar: 20

Phenotype: 100101010111111 | X = 9.194209428293147 | f(X) = 2.218280684699581 (extr: maximum)

IIIar: 21

Phenotype: 100010100111111 | X = 9.194209428293147 | f(X) = 2.218280684699581 (extr: maximum)

IIIar: 22

Phenotype: 100000111111111 | X = 9.194209428293147 | f(X) = 2.218280684699581 (extr: maximum)

IIIar: 23

Phenotype: 111010101111111 | X = 9.194209428293147 | f(X) = 2.218280684699581 (extr: maximum)

IIIar: 24

Phenotype: 100001000111111 | X = 9.194209428293147 | f(X) = 2.218280684699581 (extr: maximum)

IIIar: 25

Phenotype: 110100011111111 | X = 9.194209428293147 | f(X) = 2.218280684699581 (extr: maximum)

Результат оптимизации - X = 9.194209428293147 | f(X) = 2.218280684699581

Графики

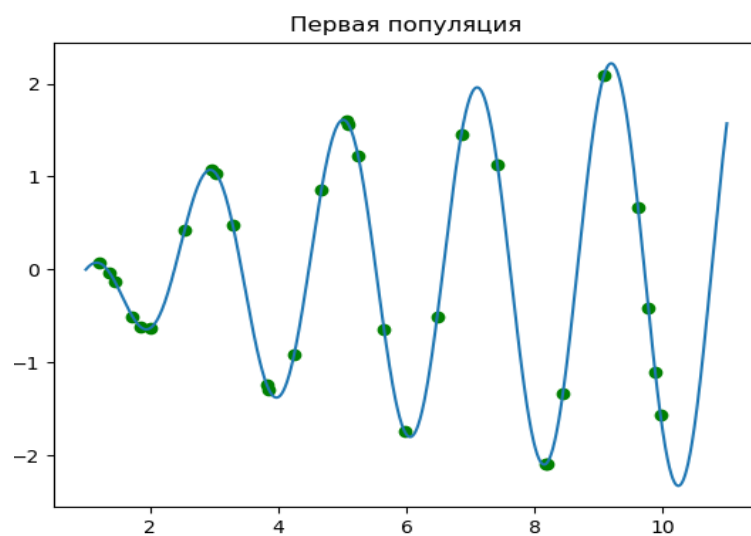


Рис. 1. Результат первой популяции.

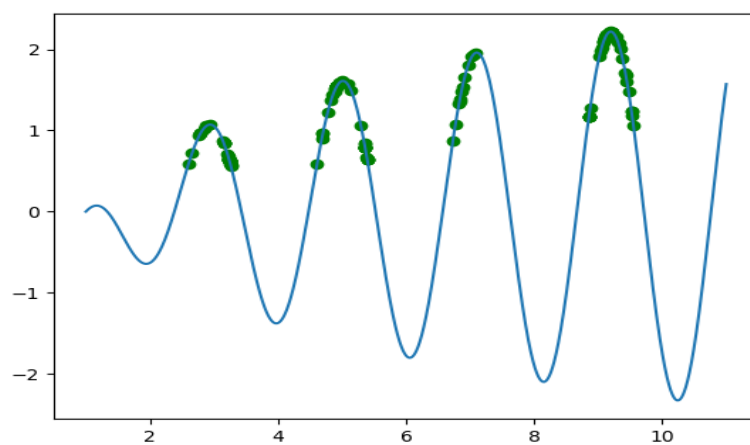


Рис. 2. Результат второй популяции.

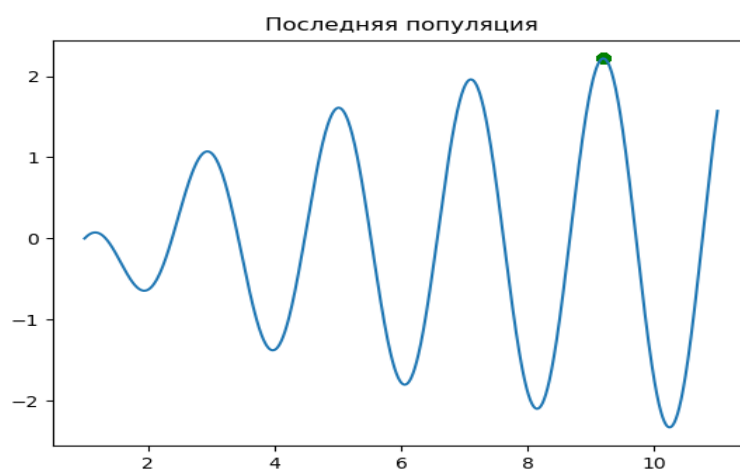


Рис. 3. Результат последней популяции.

maximize	function	$\log(x) \cos(3x - 15)$
	domain	$1 \leq x \leq 10$

Global maximum:

$$\max\{\log(x) \cos(3x - 15) \mid 1 \leq x \leq 10\} \approx 2.21828 \text{ at } x \approx 9.19424$$

Plot:

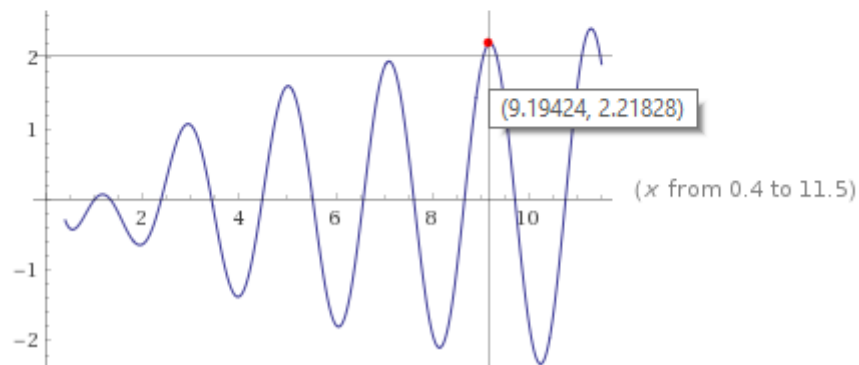


Рис. 4. Действительный экстремум.
(Результат оптимизации - $X = 9.194209428293147 \mid f(X) = 2.218280684699581$).