

Фибоначчи Fibonacci и МЫ

$$F_n = \frac{1}{\sqrt{5}} \left(\left(\frac{1 + \sqrt{5}}{2} \right)^n - \left(\frac{1 - \sqrt{5}}{2} \right)^n \right)$$

Fibonacci Formula

rosettacode.org/wiki/Fibonacci_sequence

qb64 qbasic quickbasic

```
Open "FiboFormula.txt" For Output As #1 ' optional
For i = 1 To 36 ' Russian FiboFormula.bas
    f = (1/Sqr(5))*(((1+Sqr(5))/2)^i-((1-Sqr(5))/2)^i)
    Print i, f
    Print #1, i, f ' optional
Next: End
```

qb64 qbasic quickbasic

```
= (1/sqr(5))*(((1+sqr(5))/2)^N-((1-sqr(5))/2)^N)
```

excel & Python

```
= (1/Sqrt(5))*(((1+Sqrt(5))/2)^N-((1-Sqrt(5))/2)^N)
= (1/КОРЕНЬ(5))*(((1+КОРЕНЬ(5))/2)^B3-((1-КОРЕНЬ(5))/2)^B3)
```

C C+ C++ C# C@#\$%&

```
= (1/Math.Sqrt(5))*(((1+Math.Sqrt(5))/2)^N-((1-Math.Sqrt(5))/2)^N)
```

qb64 qbasic quickbasic Фибоначчи Fibonacci

```
DIM F(80) AS DOUBLE ' FibRusB.bas
F(1) = 0: F(2) = 1 ' jdoodle.com/a/60o3
'OPEN "FibRus.txt" FOR OUTPUT AS #1
FOR i = 3 TO 80
F(i) = F(i-1)+F(i-2)
NEXT i

FOR i = 1 TO 80
f$ = STR$(F(i)): LF = 22 - LEN(f$)
n$ = ""
FOR j = 1 TO LF: n$ = " " + n$: NEXT
f$ = n$ + f$
PRINT i, f$: ' PRINT #1, i, f$
NEXT i
```

Python Фибоначчи Fibonacci

<https://rextester.com/IAJLF78214>

```
fil=1;fi2=1;fi3=1 # FibRusP.py rextester.com/FEEJ49204
for da in range(1, 97):
    print(".*(20-len(str(fi3))), end='')
    print(fi3, da)
    fi3 = fi2+fil
    fi1 = fi2
    fi2 = fi3
```

1	0
2	1
3	1
4	2
5	3
6	5
7	8
8	13
...	
24	28657
25	46368
26	75025
...	
76	2111485077978050
77	3416454622906707
78	5527939700884757
79	8944394323791464
80	1.447233402467622D+16

JavaScript JS Фибоначчи Fibonacci

jdoodle.com/h/2Um

```
<!DOCTYPE html> <html lang="en"> <head> <meta charset="UTF-8">
<meta name="viewport" content="width=device-width, initial-scale=1.0">
<meta http-equiv="X-UA-Compatible" content="ie=edge">
<title>FIBR JavaScript</title> <html> <body> <noscript>Vkluch
JS</noscript>

<script>

var n=103; var f=[n]; // var i,j,h,p; // fibr.js
f[1]=1; f[2]=2
for (i=3; i<n; i++) f[i] = f[i-1] + f[i-2]

for (i=1; i<n; i++)
{ s = ""+ f[i]
  h = 25 - s.length; p=" ";
  for (j=1; j<=h; j++) p = "."+p
  s = p + s
  document.write(s + " # " + i + "<br>")
}

</script>

</body> </html>
```

C# Фибоначчи Fibonacci

<https://rextester.com/MNGUV70257>

```
using System; using System.Text; // FIBRUS.cs Russia
namespace Fibrus { class Program { static void Main()
{ long fi1=1; long fi2=1; long fi3=1; int da; int i; int d;
for (da=1; da<=78; da++)
    { d = 20-Convert.ToInt32((Convert.ToString(fi3)).Length);
      for (i=1; i<d; i++) Console.Write(".");
    Console.Write(fi3); Console.Write(" "); Console.WriteLine(da);
      fi3 = fi2 + fi1;
      fi1 = fi2;
      fi2 = fi3;
    }}}}
}}}}
```

```
.....1 1
.....2 2
.....3 3
...
...5527939700884757 76
...8944394323791464 77
..14472334024676221 78
```

C++ Фибоначчи Fibonacci

rextester.com/DXT40049

```
#include <iostream> // fibrj.cpp
using namespace std; // rextester.com/DXT40049

string flts(int x)
{
    string q; char c;
    while(x)
        { c=(x%10)+'0'; q=c+q; x=x/10;
        } return q;
}

int main()
{
    setlocale (LC_ALL, "RUS");
    int n=45; int f[n]; int i,j,h; string p;
    f[1]=1; f[2]=2;
    for (i=3; i<n; i++) { f[i] = f[i-1]+f[i-2];
    }

    for (i=1; i<n; i++)
    {
        string s(""); s += flts(f[i]);
        // cout << f[i] << q << endl;
        h = 12 - s.size();
        p=" ";
        for (j=1; j<h; j++) p = "."+p;
        s = p + s;
        cout << s << " # " << i << endl;
    } system("pause");
}
```

trinket.io/embed/python/7fdc7adc84