Needle in a haystack

Code:

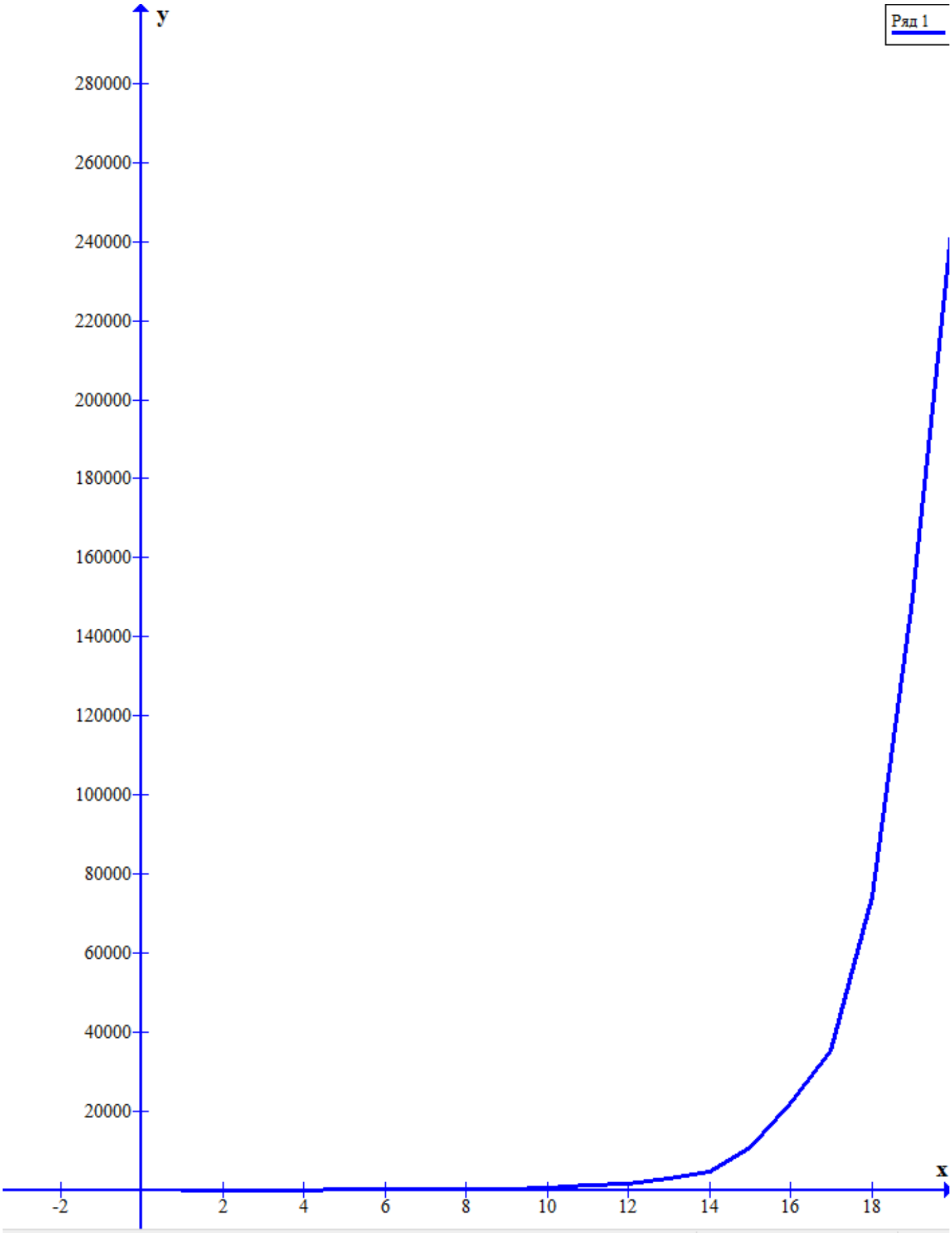
```
using System;
using System.Collections.Generic;
using System.Linq;
using System.Text;
using System.Threading.Tasks;

namespace лаба7
{
  public class Class
  {
    List<int> chromosoma = new List<int>();
    List<int> steps = new List<int>();
    Random rnd = new Random();
    public Class()
    {
      //генерируем рандомную двойную хромосому
      chromosoma.Add(rnd.Next(0, 2));
      chromosoma.Add(rnd.Next(0, 2));
      //генерируем шаги
      var item = new List<int>();
      for (int j = 0; j < 10; j++)
      {
        int step = 1;
        while (true)
        {
          for (int i = 0; i < chromosoma.Count; i++)
          {
            item.Add(rnd.Next(0, 2));
          }
```

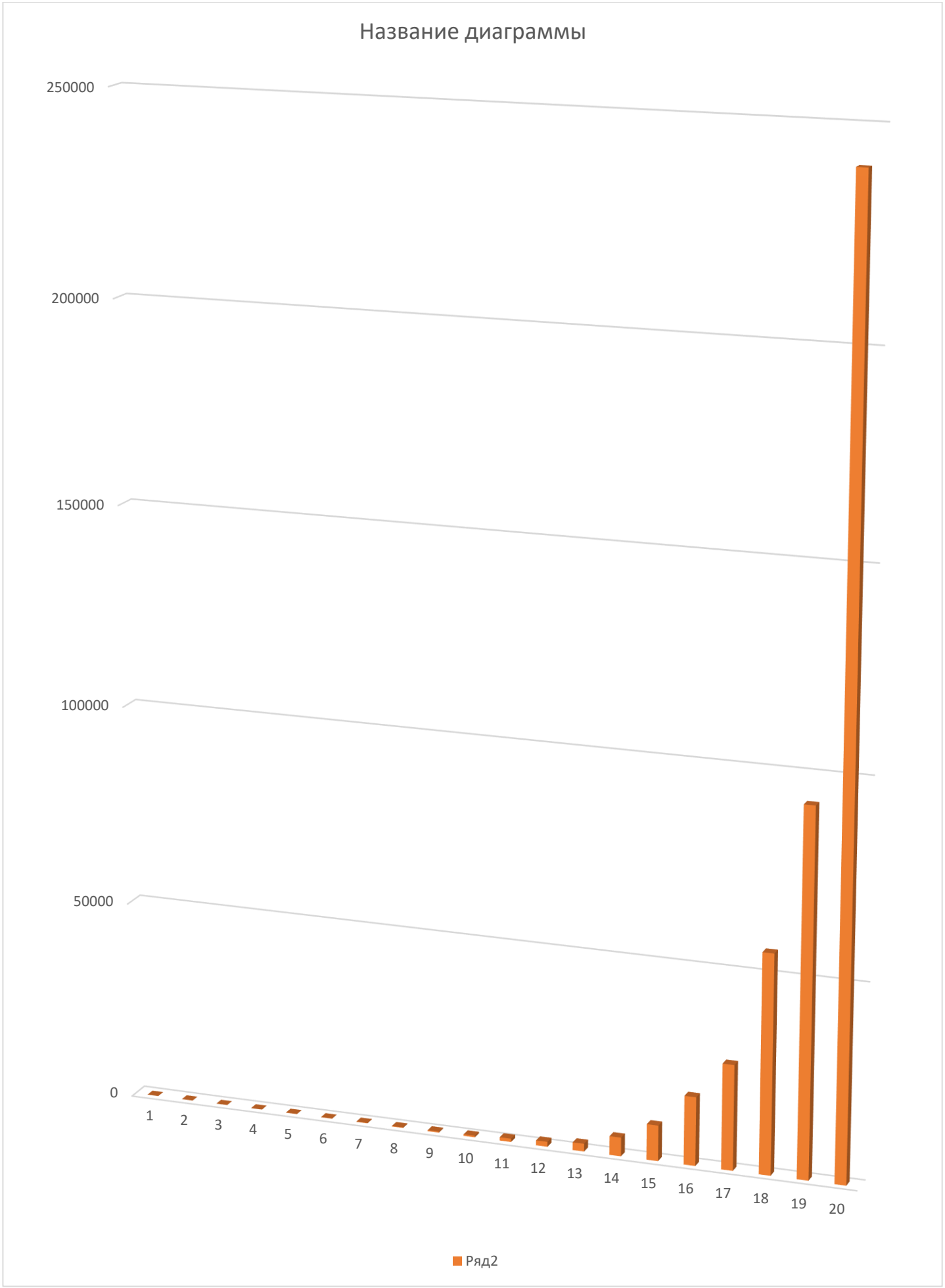
```
      if (item.SequenceEqual(chromosoma))
      {
        break;
      }
      else
      {
        item = new List<int>();
        step++;
      }
    }
    steps.Add(step);
  }
}

public int GeAverage()
{
  return (int)steps.Average();
}

public void Generation()
{
  var item = new List<int>();
  chromosoma.Add(rnd.Next(0, 2));
  for (int j = 0; j < 10; j++)
  {
    int step = 1;
    while (true)
    {
      for (int i = 0; i < chromosoma.Count; i++)
      {
        item.Add(rnd.Next(0, 2));
      }
```

```
        if (item.SequenceEqual(chromosoma))
        {
          break;
        }
        else
        {
          item = new List<int>();
          step++;
        }
       }
       steps.Add(step);
     }
   }
  }
}
using System;
using System.Collections.Generic;
using System.Linq;
using System.Text;
using System.Threading.Tasks;

namespace лаба7
{
  class Program
  {
    static void Main(string[] args)
    {
      List<int> average = new List<int>();
      Class cl = new Class();
      int i = 0;
      //после первого шага
      average.Add(cl.GeAverage());
```

```
    while(i++ < 19)
    {
      cl.Generation();
      average.Add(cl.GeAverage());
      Console.WriteLine(i);
    }
    for (int j = 0; j < average.Count; j++)
    {
      Console.WriteLine(average[j]);
    }
   }
  }
}
```

1	4
2	5
3	9
4	14
5	28
6	47
7	66
8	160
9	337
10	640
11	1098
12	1564
13	2736
14	4523
15	10548
16	21752
17	35083
18	74211
19	149514
20	246061


y
x
Ряд 1
280000
260000
240000
220000
200000
180000
160000
140000
120000
100000
80000
60000
40000
20000
-2
2
4
6
8
10
12
14
16
18


Название диаграммы
250000
200000
150000
100000
50000
0
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
Ряд2