

```

// Buffons Nadelexperiment
//
// pi = (2*L) / (A*P)
// mit
// L = Länge der Nadel, A = Abstand der Linien,
// P = Häufigkeit, daß eine Linie geschnitten wird.
//

#include <iostream>
#include <iomanip>
#include <cmath>
#include <cstdlib>
using namespace std;

// Private constants
const int m = 2147483647; // = 2^31 - 1
const int a = 48271; // vorher: 16807

// Private global variable

static int s = 314156; // Startwert austauschbar

double random () {
    static const int q = m / a; // m div a = 44488
    static const int r = m % a; // m mod a = 3399

    / m mod a <= m div a
    nt t = a * (s % q) - r * (s / q);
    = (t > 0) ? t : t + m;
    return (double)s / (double)m;
} // random

```

```

int main () {

    double pi = 4.0 * atan (1);

    // L = 2;
    // A = 2;

    int treffer = 0;
    for (int i = 1; i <= 20000; ++i) {
        double m = random ();
        double w = pi * random ();
        if (m <= sin (w))
            ++ treffer;
        if (i % 1000 == 0) {
            cout << " i = " << setw (6) << i
                << " t = " << setw (6) << treffer;
            if (treffer != 0)
                cout << " pi = " << setw (12)
                    << (2.0 * i) / treffer;
            cout << endl;
        }
    }

    system ("PAUSE");
    return 0;
} /*main*/

```

**/\* Ausgabe:**

<b>i = 1000</b>	<b>t = 621</b>	<b>pi = 3.22061</b>
<b>i = 2000</b>	<b>t = 1258</b>	<b>pi = 3.17965</b>
<b>i = 3000</b>	<b>t = 1936</b>	<b>pi = 3.09917</b>
<b>i = 4000</b>	<b>t = 2549</b>	<b>pi = 3.13849</b>
<b>i = 5000</b>	<b>t = 3183</b>	<b>pi = 3.14169</b>
<b>i = 6000</b>	<b>t = 3824</b>	<b>pi = 3.13808</b>
<b>i = 7000</b>	<b>t = 4461</b>	<b>pi = 3.13831</b>
<b>i = 8000</b>	<b>t = 5107</b>	<b>pi = 3.13295</b>
<b>i = 9000</b>	<b>t = 5731</b>	<b>pi = 3.14081</b>
<b>i = 10000</b>	<b>t = 6361</b>	<b>pi = 3.14416</b>
<b>i = 11000</b>	<b>t = 7003</b>	<b>pi = 3.14151</b>
<b>i = 12000</b>	<b>t = 7646</b>	<b>pi = 3.1389</b>
<b>i = 13000</b>	<b>t = 8295</b>	<b>pi = 3.13442</b>
<b>i = 14000</b>	<b>t = 8919</b>	<b>pi = 3.13937</b>
<b>i = 15000</b>	<b>t = 9570</b>	<b>pi = 3.1348</b>
<b>i = 16000</b>	<b>t = 10187</b>	<b>pi = 3.14126</b>
<b>i = 17000</b>	<b>t = 10850</b>	<b>pi = 3.13364</b>
<b>i = 18000</b>	<b>t = 11471</b>	<b>pi = 3.13835</b>
<b>i = 19000</b>	<b>t = 12088</b>	<b>pi = 3.14361</b>
<b>i = 20000</b>	<b>t = 12713</b>	<b>pi = 3.14639</b>

**\*/**