

## Лабораторная работа 1

Код на C++

```
#include <math.h>
#include <iostream>
```

```
using namespace std;
```

```
int main() {
    int arr[10][2]{ {10, 2}, {2, 7}, {3, 4}, {7, 9}, {0, 1}, {10, 4}, {3, 8}, {1, 13}, {19, 2}, {2,
22} };
    double tmp;
    int p1, p2;
    double dist = 0;
    cout << "[";
    for (int i = 0; i < 10; i++) {
        cout << "[" << arr[i][0] << ", " << arr[i][1] << "]";
        if (i != 9)
            cout << ", ";

    };
    cout << "]" << endl;

    for (int i = 0; i < 10 - 1; i++) {
        for (int j = 0; j < 10 - i - 1; j++) {
            tmp = sqrt(pow((arr[i][0] - arr[j][0]), 2) + pow((arr[i][1] - arr[j][1]), 2)) * 1.;
            if (tmp > dist) {
                dist = tmp;
                p1 = i;
                p2 = j;
            }
        }
    };
    cout << dist << endl;
    cout << "[" << arr[p1][0] << ", " << arr[p1][1] << "]" << endl;
    cout << "[" << arr[p2][0] << ", " << arr[p2][1] << "]" << endl;
}
```

```
Microsoft Visual Studio Debug Console
[[10, 2], [2, 7], [3, 4], [7, 9], [0, 1], [10, 4], [3, 8], [1, 13], [19, 2], [2, 22]]
14.2127
[10, 2]
[1, 13]

C:\Users\37544\source\repos\Lab1\Debug\Lab1.exe (process 1452) exited with code 0.
Press any key to close this window . . .
```

Результат работы

## Код на Python

```
import math
```

```
arr = [[10, 2], [2, 7], [3, 4], [7, 9], [0, 1], [10, 4], [3, 8], [1, 13], [19, 2], [9, 22]]
```

```
print(arr)
```

```
dist = 0
```

```
p1 = arr[0]
```

```
p2 = arr[0]
```

```
for i in range(len(arr) - 1):
```

```
    for j in range(len(arr) - i - 1):
```

```
        tmp = math.sqrt(((arr[i][0] - arr[j][0]) ** 2) + ((arr[i][1] - arr[j][1]) ** 2))
```

```
        if tmp > dist:
```

```
            dist = tmp
```

```
            p1 = arr[i]
```

```
            p2 = arr[j]
```

```
print(dist)
```

```
print(p1)
```

```
print(p2)
```

```
C:\Users\37544\PycharmProjects\Lab1\venv\Scripts\python.exe C:/Users/37544/PycharmProjects/Lab1/main.py
```

```
[[10, 2], [2, 7], [3, 4], [7, 9], [0, 1], [10, 4], [3, 8], [1, 13], [19, 2], [9, 22]]
```

```
14.212670403551895
```

```
[10, 2]
```

```
[1, 13]
```

```
Process finished with exit code 0
```

Результат работы