



University of Central Florida

UCF X

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2022-08-08

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Contest (1)

template.cpp23 lines

```
#include <bits/stdc++.h>
#define all(x) begin(x), end(x)
using namespace std;

#define rep(i, a, b) for(int i = a; i < (b); ++i)
#define sz(x) (int) (x).size()
#define all(x) begin(x), end(x)

using ll = long long;
using ld = long double;
using pii = pair<int, int>;
using vi = vector<int>;
using vii = vector<pii>;
using vvi = vector<vi>;

int main() {
    cin.tie(0)->sync_with_stdio(0);
    cin.exceptions(cin.failbit);

    return 0;
}
```

Data structures (2)

Geometry (3)

point.h

eafa48, 24 lines

```
/*
 * Author: Tyler Marks
 * Description: Handles vector/point operations in the
 *             cartesian plane
 */

template<class T> struct pnt {
    T x, y;
    pnt(int _x = 0, int _y = 0): x(_x), y(_y) {}
    bool operator<(pnt o) { return pii(x, y) < pii(o.x, o.y); }
    bool operator==(pnt o) { return pii(x, y) == pii(o.x, o.y); }
    }

    pnt operator+(pnt o) { return pnt(x + o.x, y + o.y); }
    pnt operator-(pnt o) { return pnt(x - o.x, y - o.y); }
    pnt operator*(T c) { return pnt(x*c, y*c); }
    T dot(pnt o) { return x*o.x + y*o.y; }
    T cross(pnt o) { return x*o.y - y*o.x; }
    T cross(pnt o1, pnt o2) { return (o1-*this).cross(o2-*this)
        ; }
    T dist2() { return dot(*this); }
    ld dist() { return sqrt(dist2()); }
    pnt unit() { return *this * (1/dist()); }
    pnt perp() { return pnt(-y, x); }
    pnt norm() { return perp().unit(); }
    ld ang() { return atan2l(y, x); }
};
```

Graphs (4)

Numerical Methods (6)

