Gungnir's Standard Code Library

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Contents

Chapter 1   Computational Geometry

1.1 2D

1.1.1 Basis

```
 1  typedef double DB;
 2  const DB eps = 1e-8;
 3
 4  __inline int sign(DB x) {
 5      return x < -eps ? -1 : ( x > eps ? 1 : 0 );
 6  }
 7  __inline DB msqrt(DB x) {
 8      return sign(x) > 0 ? sqrt(x) : 0;
 9  }
10
11  struct Point {
12      DB x, y;
13      __inline Point(): x(0), y(0) {}
14      __inline Point(DB x, DB y): x(x), y(y) {}
15      __inline Point operator+(const Point &rhs) const {
16          return Point(x + rhs.x, y + rhs.y);
17      }
18      __inline Point operator-(const Point &rhs) const {
19          return Point(x - rhs.x, y - rhs.y);
20      }
21      __inline Point operator*(DB k) const {
22          return Point(x * k, y * k);
23      }
24      __inline Point operator/(DB k) const {
25          assert(sign(k));
26          return Point(x / k, y / k);
27      }
28  };
29
30  __inline DB dot(const P& a, const P& b) {
31      return a.x * b.x + a.y * b.y;
32  }
33
34  __inline DB det(const P& a, const P& b) {
35      return a.x * b.y - a.y * b.x;
36  }
```