

1. C

1.1. testC++.

```

1 #include <stdio.h>
2 #include <vector>
3 #include <cstring>
4 #include <algorithm>
5
6 using namespace std;
7
8 int main()
9 {
10     int x[2];
11     int T;
12     int len[3][2];
13
14     scanf("%d",&T);
15
16     while(T--) {
17         for (int i = 0; i < 3; i++) {
18             scanf("%d %d", &x[0], &x[1]);
19
20             if (x[0] >= 0 && x[1] >= 0) {
21                 len[i][0] = x[1]-x[0];
22                 len[i][1] = 0;
23             } else if (x[0] < 0 && x[1] >= 0) {
24                 len[i][0] = x[1];
25                 len[i][1] = -x[0];
26             } else {
27                 len[i][0] = 0;
28                 len[i][1] = x[1]-x[0];
29             }
30         }
31
32         printf("%d %d %d %d %d %d %d %d\n"
33             , len[0][0]*len[1][0]*len[2][0]
34             , len[0][1]*len[1][0]*len[2][0]
35             , len[0][1]*len[1][1]*len[2][0]
36             , len[0][0]*len[1][1]*len[2][0]
37             , len[0][0]*len[1][0]*len[2][1]
38             , len[0][1]*len[1][0]*len[2][1]
39             , len[0][1]*len[1][1]*len[2][1]
40             , len[0][0]*len[1][1]*len[2][1]);
41     }
42
43     return 0;
44 }

```

2. JAVA

2.1. testJAVA.

```

1 public class Main {
2     public static void main(String[] args) {
3         System.out.println("Hello World");
4     }
5 }

```

3. PYTHON

3.1. testPython.

```

1 from math import cos, pi, ceil, sin, sqrt
2
3 def compute(P, idx):
4     F = complex(0, 0)
5     for i, p in enumerate(P):
6         if i == idx: continue
7         f = 1 / pow(abs(p-P[idx]), 3);
8         F += f * (p-P[idx]);
9     return F
10
11 R = [i*0.01 for i in range(1,10)]
12 dL = 0.003
13 dt = 1
14 G = 6.67e-11
15 m = 1
16 pos = []
17 vel = []
18
19 for r in R:
20     Len = 2*r*pi
21     N = ceil(Len/dL)
22     pp = [r*complex(cos(i/N*2*pi), sin(i/N*2*pi)) for i in
23           range(N)]
24     L = len(pos)
25     pos.extend(pp)
26     for i in range(L, len(pos)):
27         F = G*m*m*compute(pos, i)
28         A = dt*dt*((pos[i].real*pos[i].real)+(pos[i].imag*pos[i]
29               .imag))
30         B = 2*dt*(pos[i].real*(dt*dt*F.imag/m+pos[i].imag)-pos[i]
31               .imag*(dt*dt*F.real/m+pos[i].real))
32         C = (dt*dt*F.imag/m+pos[i].imag)*(dt*dt*F.imag/m+pos[i].
33               imag) + (dt*dt*F.real/m+pos[i].real)*(dt*dt*F.real/m
34               +pos[i].real) - r*r
35         k = (-B + sqrt(B*B - 4*A*C))/(2*A)

```

```
33     vel.append(complex(pos[i].imag*(-k), pos[i].real*k)-2*  
34                 complex(0,5172*sqrt(G/0.65/(945+5172))))  
35 print(len(pos))  
36 for i in range(len(pos)):  
37     print(pos[i].real+0.65,pos[i].imag,vel[i].real,vel[i].imag  
           ,sep=" ")
```