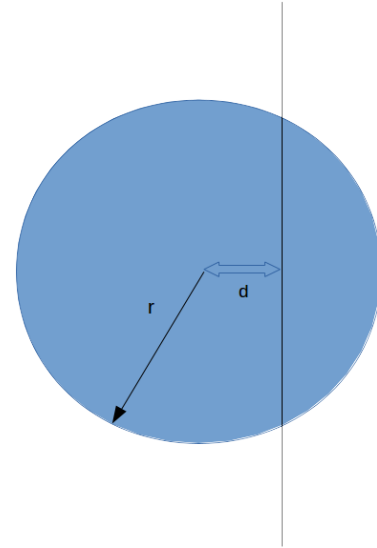


Problem B

Lenses

Time Limit: 2 seconds

Astronomy Club at Physics Center (ACPC) has hired you for a rather difficult task. They want you to make some lenses for their telescopes and observation tools. They would give you n glass spheres where the i th sphere has radius r_i . You would then place a virtual plane at distance d_i from the center of the sphere and cut on that plane using laser and give the smaller part to ACPC technicians. Do you care about the remaining of the sphere? Of course not! But you want to know how much glass you have wasted. So, find out!



Input

First line of input contains a single integer $0 < n \leq 1000$, the number of spheres. Lines $2..n + 1$ describe the spheres. Specifically, line $i + 1$ contains integers $1 \leq r_i \leq 50$ and $0 < d_i < r_i$, the radius of sphere i and its cutting distance respectively.

Output

Print n lines, each including a single number for each sphere indicating the volume of wasted glass to 2 decimal points.

Sample Input

```
2
5 1
10 2
```

Sample Output

```
339.29
2714.34
```