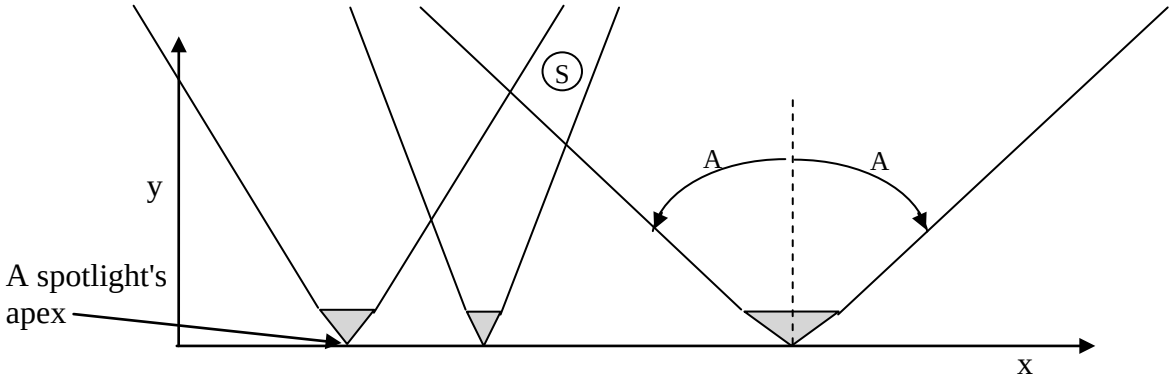
Spotlights
Input File: SpotsIn.txt

Evie owns a flat rectangular piece of property that has a set of north pointing spotlights installed ay around level along its south border line. The lights are used to illuminate the center of a south facing sign located on the property at ground level. Each light has its own focus angle, A, and its own intensity. The locations of the lights and the sign are expressed as Cartesian coordinates whose origin is the south-west corner of the property. A typical light set up is shown below as viewed from above the property.



The intensity of the light emitted from a spotlight at any point on the property is inversely proportional to the square of the point's distance from the apex of the spotlight, or the intensity is zero if the point is outside of the spotlight's focus angle. The apex of each spotlight is located on the x axis. Your task is to determine the total intensity of the light hitting the center of the sign. You need not consider sign's or the lights' height above the ground.

Inputs:
The first line of input contains the number of pieces of property to consider. This will be followed by two lines of input for each piece of property. The first line will contain three integers: the x coordinate of the center of the sign, followed by the y coordinate of the center of the sign, followed by the number of spotlights on the property line. The second line will contain three integers per spotlight: the x coordinate of the spotlight's apex, followed by the light's focus angle, followed by the intensity of the spotlight. All inputs on a line will be separated by a space.

Outputs:
There will be one line of output per piece of property, which will contain the total light intensity at the center of the sign, rounded to two digits of precision with a leading zero.

Sample inputs

```
4
10 5 1
6 45 16
5 5 3
0 50 100 5 45 100 10 40 100
```

```
10 2 2
10 15 400 40 5 500
10 4 1
10 45 16
```

Sample outputs

0.39
6.00
100.00
1.00