



10: Pizza Paranoia

Level: Easy

Time limit: 0.2 seconds

Back in the old days, the food favoured by many a **via** member before going to the **via** drinks was a pizza at the Spar. Back then, you could pick out your favourite frozen pizza, pay for it, and then have it prepared for you by the staff of the Spar. Recently, they sadly stopped providing this service, and Science Döner has been rolling in money ever since.

Nowadays, if you want a pizza, you'll have to have it delivered, which costs significantly more than those frozen pizzas ever did. Due to this, it is now more common to order one or two large pizzas, and share them with others. You can order the pizzas together, and wait at the **via** drinks for your pizza to arrive. In the meantime, there is but one thing to do: Enjoy the borrel!

When your pizza finally arrives, there is but one job left: Cut it into slices along a certain angle, and hope it is divided evenly. The procedure for cutting a pizza is as follows: Given a certain angle θ , cut a slice, rotate the pizza θ degrees, and repeat this n times (n is the amount of pizza slices you wish to obtain). Of course, depending on the angle you cut with, you might not end up with n slices, or with slices that are uneven in size. Hungry as you are, you find yourself wondering, what is the biggest slice of pizza? (and how can I claim it for myself?).

Input

The input starts with an integer m ($1 \leq m \leq 200$), indicating how many testcases will be given. Then, m lines follow, each containing one testcase. A testcase contains 5 integers, r, n, d, m, s ($1 \leq r \leq 100, 1 \leq n \leq 10^8, 1 \leq d \leq 359, 1 \leq m, s \leq 59$). r represents the radius of the pizza in centimetres, n the amount of people sharing the pizza, and d, m, s represent the angle θ in degrees, minutes, and seconds.

Output

For each testcase, output the area in square centimetres of the largest slice of pizza. The absolute error of your output must be smaller than 10^{-4} .

Sample input 1

```
2
20 1 180 0 0
40 6 119 59 0
```

Sample output 1

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1256.637061
1675.283371
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