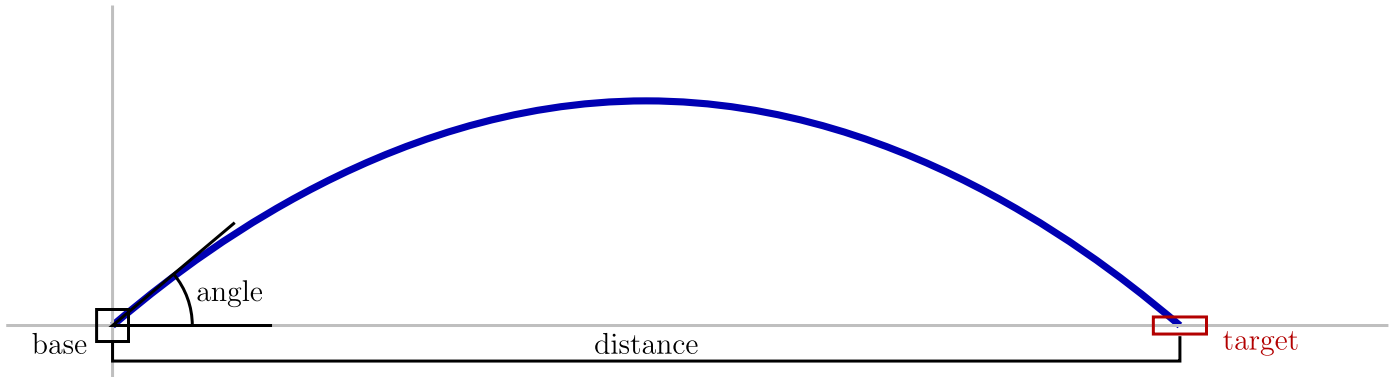


DWITE '07 R4 #1 - Curve-shot

Time limit: 2.0s Memory limit: 64M

DWITE Online Computer Programming Contest, January 2008, Problem 1

In a typical tactical shooting game, trajectory shots are fired from base to target. Given the angle of the aim and power of the shot, we are interested in the distance the projectile will travel.



Standard rules of physics apply. The shot is fired from the center of the base, at the initial velocity specified, in meters per second. The angle determines the horizontal and vertical components of the velocity and is given in degrees. The target is on the same level as the base. Gravity supplies constant downward acceleration of $9.81 \frac{m}{s^2}$. There is no wind, or any friction.

The input will contain five lines, each in `angle power` format. Angle in degrees, an integer, $0 \leq d \leq 90$. Power in meter per second, an integer, $0 \leq p \leq 100$.

The output will contain five lines, each stating the expected distance, rounded to the nearest integer.

Sample Input

```
10 100
25 100
40 100
60 100
85 100
```

Sample Output

349
781
1004
883
177

Problem Resource: [DWITE](#)