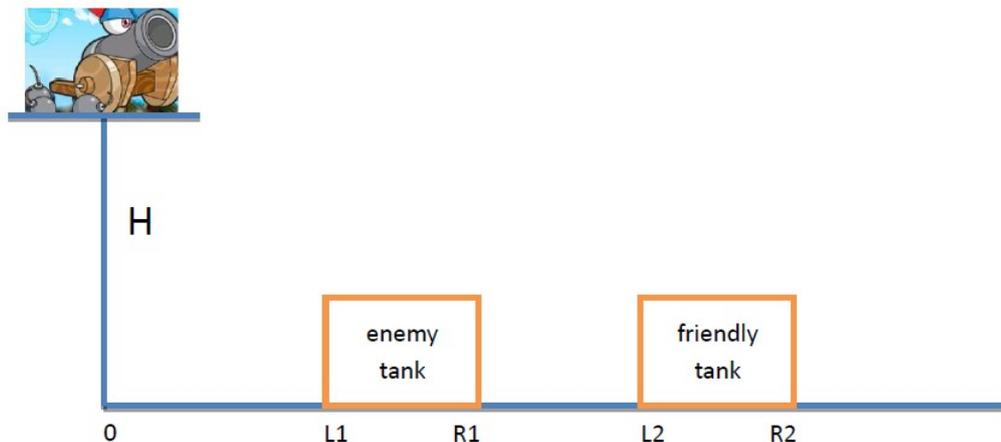


6331 Crazy Tank

Crazy Tank was a famous game about ten years ago. Every child liked it. Time flies, children grow up, but the memory of happy childhood will never go.



Now you're controlling the tank Laotu on a platform which is H meters above the ground. Laotu is so old that you can only choose a shoot angle (all the angle is available) before game start and then any adjusting is **not allowed**. You need to launch N cannonballs and you know that the i -th cannonball's initial speed is V_i .

On the right side of Laotu there is an enemy tank on the ground with coordination $(L1, R1)$ and a friendly tank with coordination $(L2, R2)$. A cannonball is considered hitting enemy tank if it lands on the ground between $[L1, R1]$ (two ends are included). As the same reason, it will be considered hitting friendly tank if it lands between $[L2, R2]$. Laotu's horizontal coordination is 0.

The goal of the game is to maximize the number of cannonballs which hit the enemy tank under the condition that no cannonball hits friendly tank.

The g equals to 9.8.

Input

There are multiple test case.

Each test case contains 3 lines.

The first line contains an integer N ($0 \leq N \leq 200$), indicating the number of cannonballs to be launched.

The second line contains 5 float number H ($1 \leq H \leq 100000$), $L1$, $R1$ ($0 < L1 < R1 < 100000$) and $L2$, $R2$ ($0 < L2 < R2 < 100000$). Indicating the height of the platform, the enemy tank coordinate and the friendly tank coordinate. Two tanks **may overlap**.

The third line contains N float number. The i -th number indicates the initial speed of i -th cannonball.

The input ends with $N = 0$.

Output

For each test case, you should output an integer in a single line which indicates the max number of cannonballs hit the enemy tank under the condition that no cannonball hits friendly tank.

Hint:

In the first case one of the best choices is that shoot the cannonballs parallelly to the horizontal line, then the first cannonball lands on 14.3 and the second lands on 28.6.

In the second there is no shoot angle to make any cannonball land between $[35,40]$ on the condition that no cannonball lands between $[2,30]$.

Sample Input

```
2
10 10 15 30 35
10.0
20.0
2
10 35 40 2 30
10.0
20.0
0
```

Sample Output

```
1
0
```