H - Rocket Landing

The Problem

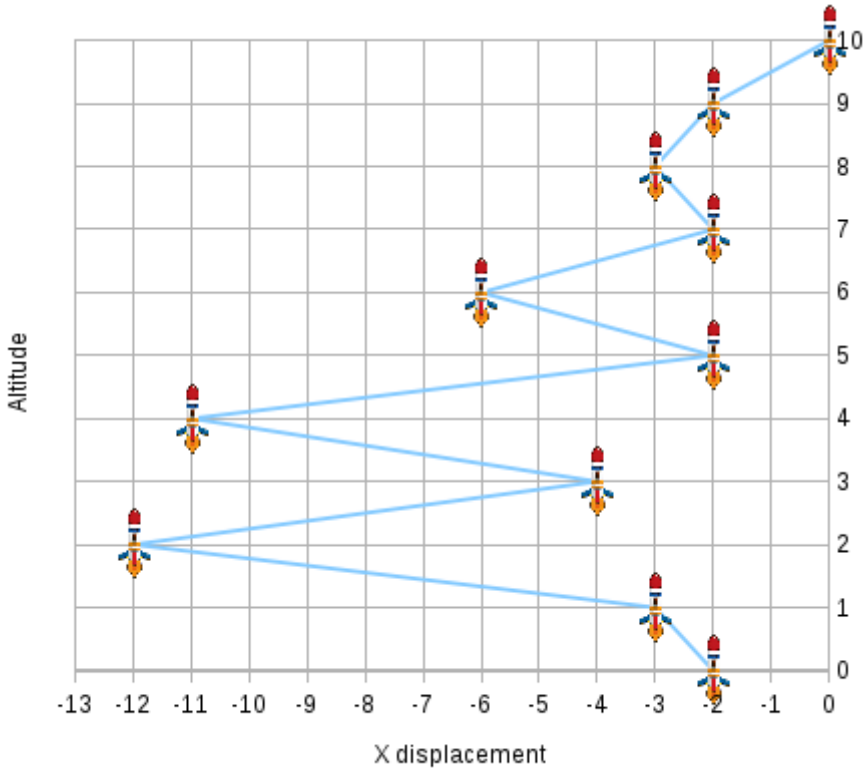
You have to write the autopilot program for a reusable rocket. The hard part is to write the landing routine. When landing, the thruster will always be engaged to balance gravity so that the rocket will descend at a constant rate of 1 m/s. The thruster can be set at higher power only once and for a limited amount of time, due to fuel limitations. While the thruster is running in high power mode, the rocket will ascend at a constant rate of 1 m/s. Whether it is going up or down, the rocket also moves laterally due to the wind.

The autopilot has to decide when to start using the high power mode of the thruster and for how long so that the final landing position of the rocket is as near as possible to the point in the ground exactly under the initial position of the rocket. The high power mode can only start after an integer number of seconds after descent starts and must stop after an integer number of seconds too.

For example, if the rocket starts at an altitude of 10 meters, the high power mode is not used at all and the wind pattern is as follows:

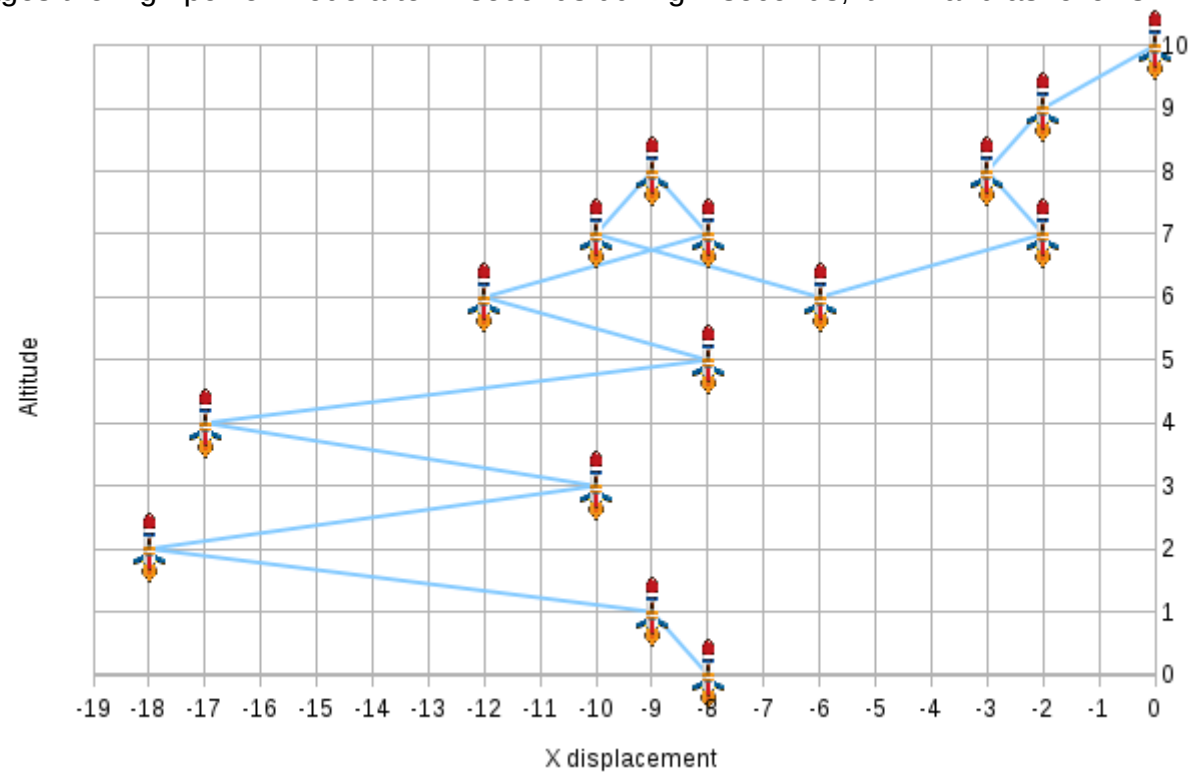
Altitude	Wind speed	Direction
10	2	←
9	1	←
8	1	→
7	4	←
6	4	→
5	9	←
4	7	→
3	8	←
2	9	→
1	1	→

The rocket will descend as follows (showing the position of the rocket each second):



That is, at time 0 the rocket would be at altitude 10 and displacement 0. After 1 second, it will descend 1 meter due to gravity and move 2 meters to the left due to the wind. In this case, the high power mode is not used, so after 10 seconds the rocket will be at ground level and 2 meters to the left of the preferred landing spot.

However, if the rocket starts with the same initial conditions and wind patterns, but it engages the high power mode after 4 seconds during 2 seconds, it will land as follows:



That is, it will proceed as in the previous case for the first 4 seconds arriving to 6 meters of altitude with a displacement of 6 meters to the left. Then it will engage the high power mode of the thruster, so it will ascend 1 meter during the next second while moving 4 meters more to the left, then it will ascend another meter during the next second while moving also 1

meter to the right. At this point, the thruster goes back to normal operation and then the rocket descends 1 meter during the next second, while moving another meter to the right due to the wind. Finally, after 14 seconds, the rocket lands 8 meters to the left of the preferred landing spot.

The Input

The input format is as follows:

An integer in a single line which says the number of problems to solve. Then, for each problem:

- A line with one integer F between 0 and 30000 representing the maximum number of seconds that the high power mode can be used.
- A line with one integer H between 1 and 50000 representing the initial altitude of the rocket.
- H-1 lines with one integer each representing the wind speed at different altitudes. The first line represents the wind speed from altitude H to H-1, the second from altitude H-1 to H-2, and so on until the last one which represents the wind speed from altitude 1 to 0. Positive numbers represent rightwards winds, while negative values represent leftwards winds.

The Output

For each problem, a line with three numbers separated by spaces. The first number should be when to start using the high power mode, the second should be the duration of the use, and the third should be the final distance from the preferred landing spot.

It there is more than one solution with the same minimal distance from the preferred landing spot, the program should print the solution which uses the high power mode for the least amount of time, and if there are more than one such solution, the one that starts using it earlier.

The rocket can never reach higher than the initial altitude.

Sample Input

```
1
5
10
-2
-1
1
-4
4
-9
7
-8
9
1
```

Sample Output

```
3 1 0
```

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