



## 5 *Programming strategy*



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The friends John, Jack and Joseph, like to participate of programming competitions. They have different strategies we would like to know which strategy is best:

**John** – simply solves the problems in the order in which he receives them from the contest organizers;

**Jack** – first reads all problems and solves them in increasing order of difficulty;

**Joseph** – also he reads all problems first, but he is very ambitious and, therefore, solves the problems in decreasing order of difficulty.

The *difficulty* of a problem is measured in “how many minutes” the boys take to solve the problem.

We gathered statistics and consulted the “Thierson Couto Oracle” – an oracle as famous in INF/UFG as that of *Oracle of Delphi*, in Ancient Greece. So we know, for all types of problems, how much time the boys will need.

We also found that for each problem, the three guys always need the same time, which depends on the difficulty of the problem. Thus, they differ just for their particular strategies.

For various competitions, we would like you to tell us the “winner”, the number of problems solved and what your “score”.

The “score” for a single problem is the time, in minutes, from the start of the contest until its resolution.

The *overall scoreboard* is the sum of the scores of the problems solved.

The boys never make mistakes, so you do not have to deal with penalties. The “winner” is that that solve more problems and, in case of a tie, the one with the lowest score. If there is still tie, the three boys agree that Joseph is the winner because he always brings delicious apple pies to everyone during workouts.

### **Input**

The first line of the entry will contain an integer  $t$ , the number of test cases, where  $1 \leq t \leq 1000$ .

Each test case describes a contest and its first line tells how long the competition lasts  $d$ , in minutes, where  $30 \leq d \leq 1440$ , and number of problems  $p$ , from 3 to 24.

In a second line you will have the “difficulties of problems”, such as explained above, they say how many minutes (from 1 to 600) the guys need to solve the problems.

## Output

The output must contain, for each test case, a line containing the name of the “winner”, the number of problems that he solves and, finally, his score.

Use the exact format as shown below in the example, even if the winner only solves 0 (zero) or 1 (one) problem.

## Example

Entrada	Saída
2 180 6 23 42 170 33 7 19 60 2 43 17	Jack 5 288 Jack 2 77

Entrada	Saída
2 500 8 10 30 40 20 50 70 90 100 600 5 100 70 50 10 30	Jack 8 1290 Jack 5 560