

Chess Tournament 2

Input file: **standard input**
Output file: **standard output**
Time limit: 1 second
Memory limit: 256 megabytes

You want to organize a chess tournament in your town but given the recent developments in the chess world, you want to use some extra measures to make sure that everyone playing there is playing fairly.

Thus, you came up with a system to decide the strength of each move played by each player and in order to decide whether a player cheated or not, you decided to compute the average move strength and if it exceeded a certain threshold based on that player's initial chess rating, then you conclude that a player cheated.

More formally, you are given the data from t chess players. For each chess player you know the number of moves they made during the contest, as well as the initial elo and the threshold you are going to use.

Based on the rules described in the statement, decide whether each player cheated or not.

Input

The first line of the input will contain t ($1 \leq t \leq 100$), the number of players which played in the tournament.

The first line of each test case will contain n , elo and $threshold$ ($1 \leq n \leq 1000$), ($1 \leq threshold \leq 1000$), ($1 \leq elo \leq 3500$), representing the number of moves the i^{th} player made during the tournament, the initial rating the player had and the threshold you are going to use for this player.

The second line of each test case will contain n values, representing the strengths of the moves the player did ($1 \leq strength_i \leq 5000$).

Output

The output will contain for each player a message, namely "Cheater" if the player cheated or "Innocent" otherwise (without the quoting marks).

Example

standard input	standard output
3	Cheater
5 800 400	Innocent
900 1000 1500 1300 1400	Innocent
8 1000 200	
950 800 1000 1100 1200 845 100 924	
6 2500 400	
1900 2100 950 2500 2000 3000	

Note

The first player's move strength is $6100 / 5 = 1220$, which is greater than 1200, the maximum threshold allowed.

The other two players have not cheated, thus they are innocent.