1688. TEAM.GOV!

PRESENTED BY:-

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PROBLEM DESCRIPTION

As a result of a strange set of circumstances, Ivan became a member of the team named Ural SU Team.GOV. Vadim and Alex, being permanent members of the team, declared to Ivan that nobody had yet left the team just so easily: the charge for leaving the team was n rubles. As soon as Ivan bought for Vadim and Alex beer for n rubles, he would be allowed to leave Team.GOV and enter any other team. At first Ivan was distressed with that news, but then he understood that it was not so bad to be in Team.GOV. The point was that every time the team visited a restaurant, Vadim paid for all three of them. After several such visits, Ivan realized that he had already saved quite a sum of money. He decided to write down the sums that the team paid in restaurants and leave the team as soon as the money Vadim had paid for him exceeded n rubles. You may assume that the three members of the team order the same set of dishes; it means that if each of them paid for himself, they would have to divide the sum in the bill by 3.

Input

In the first line you are given the charge n for leaving Team.GOV and the number m of visits to restaurants (n is integer; $1 \le n \le 2 \cdot 10^9$; $0 \le m \le 3000$). In the following m lines you are given the sums spent in the restaurants; these are integers in the range from 1 ruble to 2 million rubles.

Output

If Ivan can leave Team.GOV after x visits to restaurants, output "Free after x times." Otherwise, output "Team.GOV!"

Problem Author: Alexander Ipatov
Problem Source: USU Open Personal Contest 2009 (February 28, 2009)

Solution technique.

The technique used is called dynamic programming.

The input specifies the charge Ivan is given for leaving the group along with the number of restaurants visited by the team.

The remaining lines specify the amount paid each time the team visited the restaurants.

In the code there is a variable called sum which keeps adding the amount spent at the restaurant each time the number is entered and at the same time also keeps checking if the sum of the bills has exceeded the number stored in variable n(the charge given to Ivan for leaving the group.

There is a variable ans which keeps a store of how many bills have been added.

Once all the input are entered the final condition that checks if the sum is greater than n multiplied by 3. If the condition is true, the algorithm returns *"Free after x times."* Where x is the number of bills whose sum has exceeded the charge given to Ivan. If the condition is false the algorithm returns *"Team.gov!"* meaning Ivan cannot leave the group yet.

Solution results

ID	Date	Author	Problem	Language	Judgement result	Test #	Execution time	Memory used
7383846	22:14:41 10 May 2017	Xiaohan Yu	1688. Team.GOV!	Python 2.7	Accepted		0.015	464 KB
7383796	21:25:14 10 May 2017	Asnai	1688. Team.GOV!	Python 2.7	Accepted		0.046	464 KB

Program code is in the same folder as project report.