Bank Accounts

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You are going to receive n payments in the upcoming month. The payments are numbered from 0 to $n-1$ and p_i denotes the amount of money in dollars that will be paid in connection with the i-th payment. Before receiving the payments, you have two banking options to consider:

1. You can receive all the payments on your current bank account remembering that the bank charges you for each payment i $\max(k, x\% \text{ of } p_i)$, where k and x are given.
2. You can pay the bank d dollars upfront to open a new special account for which the bank doesn't charge you for any of the upcoming transactions.

Your task is to decide which of the above two options is more profitable to you. If both ways are equally profitable, then you prefer to be charged for each transaction.

Input Format

In the first line, there is a single integer q denoting the number of scenarios to handle. After that, descriptions of all these scenarios follow. In the first line of a single scenario, there are 4 space-separated integers n, k, x, d. In the second line, there are n space separated integers $p_0, p_1, \ldots, p_{n-1}$.

Constraints

- $1 \leq q \leq 5$
- $1 \leq n \leq 100$
- $1 \leq p_i \leq 10^3$
- $1 \leq k \leq 10^3$
- $1 \leq x \leq 100$
- $1 \leq d \leq 10^5$

Output Format

Print exactly q lines. In the i-th of them, print the answer to the i-th scenario. More specifically, print `fee` if it's more profitable to use the current account and let the bank charge for each transaction, or print `upfront` if it's better to pay the bank up front for opening the new special account.

Sample Input 0

```
3
3 20 10 60
100 200 300
3 20 15 120
200 250 300
1 1 10 100
1000
```

Sample Output 0

```
upfront
fee
fee
```

Explanation 0

There are 3 scenarios in the sample.

In the first one, there are 3 payments with amounts: $100, 200, 300$. In the first option, for each transaction with amount p_i, the bank charges $\max(20, 10\% \text{ of } p_i)$. In the second option, you can pay upfront 60. It turns out that it's better to choose the second option, i.e. pay up front, because in the first option the bank would charge 70 across all the payments.

In the second scenario, it's better to be charged for each transaction because the bank will charge 112.5 across all payments, which is strictly less than the cost of paying upfront.

In the third scenario, each banking option costs 100. In the statement, it's written than in such a case we prefer to pay a fee.