Security Breach

A bank analyzes a list of IP addresses from where its online portal has been accessed in the last several months. Depending on whether the access was a normal one (i.e, with the intention of a genuine transaction) or a surreptitious one (a security attack), the IP addresses are classified as 'safe' or 'threat'. You do know that there are two particular countries *A and B* from where all of these security attacks originate. IP addresses from *A and B* are likely to be 'threats' with certain probabilities *Pa and Pb* respectively. (as you will detect from the data). Assume the overall behavior of the customers or attackers remains the same in both the training file and the hidden test input and that IP blocks, relate to geography. i.e two IP addresses **a.b.c.d** and **a.b.c.e** are from the same country.
Given an un-seen set of IP addresses your task is to identify which one of them need to be identified as 'threat'.

Training File format
The file can be viewed here. This is also available as "training-file.txt" in the same folder where your program will be run.
The training file contains *N* rows with 2 columns:
The first one is the IP address and the second is `safe` or `threat`.

NOTE: In the training data the last number in the IP address can be over 256. However, the every IP address in the input test case will be valid.

Input File Format
An integer *N* representing the number of IP addresses.
This is followed by *N* IP addresses.

Output File Format
N rows.
The i-th row contains the word "safe" or "threat" corresponding to your classification of the i-th IP address.

Sample Input

```
140000
203.0.225.10
203.8.118.248
211.26.0.87
195.158.252.94
91.233.8.192
210.12.128.154
139.54.0.101
103.244.120.74
194.31.222.29
87.253.232.52
221.216.0.71
213.170.160.54
194.4.242.214
83.136.128.191
122.49.128.163
...
```

Sample Output

```
safe
safe
safe
safe
safe
threat
safe
safe
safe
safe
threat
...
```

Scoring
Less than 20% of the attacks are 'threat' attacks.

Score will be computed as follows. First we will compute the accuracy for the test file: accuracy = C/N C = Number of IP

addresses correctly marked as 'threat' or 'safe' and N = Total number of IP addresses. Score = max ((accuracy-0.80)/0.20,0)