

1st problem (Make Trump Happy Again):

Donald Trump hates mathematical problems, but sensei (his teacher) pressures him a lot. Today's task is very hard, so he is asking you for help.

There is a set of n non-negative numbers. There is also an integer named as 'sum'. Trump has to find if it is possible to get a subset of the given set with sum equal to the given sum.

Help Trump to solve this problem. He'll gift you ten cockroaches if you help.

INPUT

It contains 3 lines.

The first line is the size of the array ($1 \leq n \leq 10^4$)

The second line is the array. ($1 \leq \text{arr}[i] \leq 10^4$, where $\text{arr}[i]$ is the i -th element of the array)

The last line is the required sum s . ($1 \leq s \leq 10^4$)

OUTPUT

Print 'Trump happy' if the sum can be constructed from the array.

Else, print 'Trump tensed'.

TEST CASE

INPUT

5

2 5 6 4 1

7

OUTPUT

Trump happy

INPUT

8

22 43 50 66 12 23 44 12

25

OUTPUT

Trump tensed

INPUT

2

1 1

1

OUTPUT

Trump happy

2nd problem (Lazy Mofiz):

Problem setter Mofiz is too lazy to make up a story about a problem, so he directly gives you the problem statement. Now solve it.

If,

$n! \% p^x = 0$, where

n and x are integers, p is prime number, find the largest x .

INPUT

The first line contains one integer t ($1 \leq t \leq 10$) — the number of test cases.

Each test case consists of one line containing 2 integers n p .

Here $1 \leq n \leq 10^9$ and $2 \leq p \leq 500$.

OUTPUT

Print $(x \bmod 10^9)$ for each case.

TEST CASE

INPUT

3

2 3

4 2

10 7

OUTPUT

0

3

1

INPUT

5

4 2

8 3

12 2

19 13

17 7

OUTPUT

3

2

10

1

2