Task: PIS
Writers

Attention: In this task the source code size limit is 10 kB (as opposed to the usual 100 kB).

Bytie encountered a text excerpt that certainly comes from one of the following three masterpieces of Polish literature:

- "Pan Tadeusz"* by Adam Mickiewicz,
- "Quo Vadis" by Henryk Sienkiewicz,
- "The Doll" by Bolesław Prus.

The issue is that he is not so certain which one it is. Help him out by writing a program that will determine the book the excerpt comes from.

Input

In the first input line, there is an integer T ($1 \le T \le 1000$) specifying the number of test cases. Each of the following T lines contains an excerpt from one of the three aforementioned books. The excerpt is stripped of Polish diacritics, contains between 10 and 2000 words, and both begins and ends with a complete word (or punctuation mark).

The total length of all the excerpts given on input will not exceed two million characters.

Output

Exactly T lines should be printed to the standard output, the i-th of which should contain a single word `Mickiewicz`, `Prus`, or `Sienkiewicz`, corresponding to the author of the i-th input excerpt.

Example

For the input data:

```
3
Petroniusz obudzil sie zaledwie kolo...
Litwo! Ojczyzno moja! ty jestes jak...
W poczatkach roku 1878, kiedy swiat...
```

the correct result is:

```
Sienkiewicz
Mickiewicz
Prus
```

Explanation for the example: The excerpts given on input are the beginnings of respective works. The sample input has been trimmed here for sake of the problem description structure.

Grading

Attention: This is a **data analysis** task. There may be no ideal solution that correctly recognizes all excerpts. The grading will be as follows:

- Let T be the number of excerpts on input.
- Lt P be the number of correct answers given by contestant's program.
- If $P \ge 0.9 \cdot T$, the contestant is awarded 100% of the points for the test.
- If $P \le \frac{T}{3}$, the contestant is awarded 0% of the points for the test.
- Otherwise, the contestant is awarded $100 \cdot \frac{P - \frac{T}{3}}{0{,}9 \cdot T - \frac{T}{3}}$ % of the points for the test.

All excerpts come from the files supplied with the task statement. Moreover, a program `pistestgen.py` is also supplied, which allows generating a random test with the command `python3 pistestgen.py` *grupa nazwa katalog [ziarno]*, where:

- *grupa* is the number of the test subset (an integer between 1 and 4),

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*full title: *Sir Thaddeus, or the Last Lithuanian Foray. A Nobleman's Tale from the Years of 1811 and 1812 in Twelve Books of Verse*

- *nazwa* is the name of the test (the program will create files *nazwa*.in and *nazwa*.out),

- *katalog* is the path to the directory which containing the (texts of the) works,

- *ziarno* is an optional parameter (a string of characters) which uniquely determines the output test, thus allowing generating the same test repeatedly.

This very program has been used to generate (all) test cases on which the contestants' solutions will be evaluated.

Subset	Condition	Score
1	$T \leq 100$, the excerpts contain between 500 and 2000 words	20
2	$T \leq 1000$, the excerpts consist of full sentences	20
3	$T \leq 1000$, the excerpts contain between 30 and 80 words	30
4	$T \leq 1000$	30