

Problem A. Simplified Genome Translation

Input file: standard input
Output file: standard output
Time limit: 3 seconds
Memory limit: 1024 megabytes

The translation is a critical step for transferring the genome information (mRNA) into a biology unit (protein). Specifically, it parses three RNA nucleotides into one amino acid according to the codon table (Table 1).

amino acid	RNA nucleotides
F	UUU UUC
L	UUA UUG CUU CUC CUA CUG
I	AUU AUC AUA
M	AUG
V	GUU GUC GUA GUG
S	UCU UCC UCA UCG AGU AGC
P	CCU CCC CCA CCG
T	ACU ACC ACA ACG
A	GCU GCC GCA GCG
Y	UAU UAC
H	CAU CAC
Q	CAA CAG
N	AAU AAC
K	AAA AAG
D	GAU GAC
E	GAA GAG
C	UGU UGC
W	UGG
R	CGU CGC CGA CGG AGA AGG
G	GGU GGC GGA GGG
STOP	UAA UAG UGA

Table 1: The codon table.

For example, given an RNA sequence, $R = \text{CUCAGCGUUACCUAGUUUCAUUGUGCU}$, its three code parsing is CUC AGC GUU ACC UAG UUU CAU UGU GCU, and its translated amino acid is $P = \text{LSVT}$. Notice UAG is a stop codon that stops the translation process. There are three stop codons, UAA, UAG, and UGA, in Table 1.

Input

The first line contains an integer T , which represents the number of test cases. Each test case below has one line, an RNA sequence, R .

Constraints

- $1 \leq T \leq 50$.
- R is the sequence of the alphabet $\Sigma = \{\text{A, C, G, U}\}$.
- $|R| = 3 * n$, where $1 \leq n \leq 333$.
- P is the translated amino acids from the R terminated by STOP codons if existing (i.e., the first test case) or complete translation if no STOP codon. STOP codon will not be at the beginning of P .

- All string characters are uppercase letters.

Output

Each test case outputs the corresponding translated amino acid, *P*.

Examples

standard input	standard output
5 UUUU AACACUUUAUCACUUAACACCAC CAAAUAUGAAAAAU AUGUACUUUGCGUUUCACUAA UUGCACUACUAC UACGUGGGUAUC	F QNMKN MYFAFH LHYY YVGI