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, $R =$ `CUCAGCGUUACCUAGUUUCAUUGUGCU`, its three code parsing is `CUC AGC GUU ACC UAG UUU CAU UGU GCU`, and its translated amino acid is $P =$ `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 $\Sigma =$ `{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 UUUUAACACUUUAUCACUUAACACCAC CAAAAUAUGAAAAAU AUGUACUUUGCGUUUCACUAA UUGCACUACUAC UACGUGGGUAUC	F QNMKN MYFAFH LHYY YVGI