

7631 Talk in numbers

You came across an old manuscript written entirely in numbers and, thankfully, the instructions to decode it were included, but obviously not the means — it is an old manuscript after all and you would rather not decipher the document by hand.

Each word has essentially been sorted first by length then alphabetically such that “a” is the first word followed by “b”, etc. Only the lowercase letters a..z are allowed.

The decoding instructions that came with the manuscript included this subset of words as an example:

a	1
b	2
c	3
...	
z	26
aa	27
ab	28
...	
zz	702
...	
hello	3752127
...	

Input

The input consists of an arbitrary number of lines, but no more than 200. Each line contains a single number, which will always be less than 2^{63} .

The end of input is indicated by a line containing only the value ‘-1’.

Output

For each input line, output a line containing the word that corresponds to the input number.

Sample Input

```
13733
8143861
1241072
4470
4948079
278660
13733
212289
3101
-1
```

Sample Output

the
quick
brown
fox
jumps
over
the
lazy
dog