Letters

We build the infinite sequence of uppercase letters (A-Z) which starts with single-letter strings (A, B, ..., Z), continues with two-letter strings (AA, AB, ..., AZ, BA, BB, ..., BZ, ..., ZZ), then three letter strings and so on. The same-length strings are ordered lexicographically. We are interested in finding which letter sits at a given index in the sequence.

Input

The letter index, ranging between 0 and 2*10^9.

Output

The letter at the specified index.

Example

Input:

```
0
25
50
100
250
500
1000
```

Output:

```
A
Z
A
B
E
J
S
```