Amplitude Hackathon '23 Practice Problem 2 - Go Amplitude!

At the end of the last All Hands, Spenser says `GO AMPLITUDE` very emphatically. The Zoom caption transcription bugs out and starts emitting `GOAMPLITUDE` in an infinite loop.

You are curious what the Nth letter of a string of `GOAMPLITUDE` repeating infinitely looks like.

Constraints

$1 \leq N < 10^{1000000}$

Subtask 1 [1 point]

$N \leq 11$

Subtask 2 [1 point]

$N \leq 10^3$

Subtask 3 [1 point]

$N \leq 10^6$

Subtask 4 [1 point]

$N \leq 10^{18}$

Subtask 5 [1 point]

No additional constraints.

Input Specification

The first and only line of input contains a single positive integer N.

Output Specification

Output the Nth letter of a string of `GOAMPLITUDE` repeating infinitely.

Sample Input 1

```
11
```

Sample Output 1

```
E
```

Sample Explanation 1

The first 11 letters are `GOAMPLITUDE`, so the 11th letter is an `E`.

Sample Input 2

```
12
```

Sample Output 2

```
G
```

Sample Explanation 2

The first 22 letters are `GOAMPLITUDEGOAMPLITUDE`. The 12th letter is therefore a `G`.