Problem B: Octagons

Below is a picture of an infinite hyperbolic tessellation of octagons. If we think of this as a graph of vertices (of degree three), then there exists an isomorphism of the graph which maps any vertex x onto any other vertex y. Every edge is given a label from the set $\{a,b,c\}$ in such a way that every vertex has all three types of edges incident on it, and the labels alternate around each octagon. Part of this labeling is illustrated in the diagram.

So a path in this graph (starting from any vertex) can be specified by a sequence of edge labels. Your job is to write a program which, given a squence of labels such as "abcbcbcabcaccabb", returns "closed" if the path ends on the same vertex where it starts, and returns "open" otherwise.

Input Specification

The input will begin with a number $Z \leq 200$ on a line by itself. This is followed by Z lines, each of which is a squence of length at least 1 and at most 40 of 'a's 'b's and 'c's.

Sample Input

```
2
abababab
abcbcbcbcba
```

Output Specification

For each input instance, the output will be the words "closed" or "open", each on a single line.

Output for Sample Input

```
closed
open
```

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