Problem E
Undead or Alive

Now that zombies have learned to use SMS messaging, it is imperative to develop software for detecting zombies over text. After many long months of study, the top scientists have figured out how to do it. The key observation is that humans only use smiley faces, represented by the exact substring `:)`, and zombies only use frowny faces, represented by the exact substring `:(`. However, upon realizing this, double agents were trained to use both kinds of emoticons at once! Your job is to write a program to determine who a given message is from.

Input

The input will consist of a single line of text, no longer than 160 characters, containing letters, numbers, spaces, and any of the following symbols: `.,'!?:)(`.

Output

- If the line contains only smiley faces and no frowny faces, then output `alive`.

- If the line contains only frowny faces and no smiley faces, then output `undead`.

- If the line contains both smiley faces and frowny faces, then output `double agent`.

- Otherwise, output `machine`.

Sample Input 1

```
Hello, how are you? :)
```

Sample Output 1

```
alive
```

Sample Input 2

Hey there! :(What's up? :(

Sample Output 2

undead

Sample Input 3

::(Braaaains... are very useful for programming contests:))

Sample Output 3

double agent

Sample Input 4

Sandy, when will my order be delivered?

Sample Output 4

machine

Sample Input 5

Firing up EmoticonBot... (: : ( ): :D c:

Sample Output 5

machine