

Problem CAVE: Cave

James Bond is on a space mission to the moon. According to current MI6 information, the next generation of terrorist superstars shelter in a cave labyrinth on the backside of the moon while planning attacks on the United Kingdom. The villains are known to defend themselves by simply flooding the whole cave complex with a superjellygoo to drown all intruders. The goo is produced by Dr. No & Sons Inc. and behaves like water on planet earth. Despite this sophisticated defense mechanism, James must hunt them down. He obtained some pretty reliable maps from the lunar Bond girl. In such a map, an underscore `_` denotes a cave and a hash `#` represents a wall. Using these maps, James wants to assure that he is able to enter the caves, and survive in a safe spot, even when the villains flood it. The flooding starts from all boundary positions of the map. Once a cave is full, its neighbouring caves (left, right, up, and down) will also be flooded whenever the neighbour is no wall. The flooding does not occur diagonally. James got a special gizmo for this mission that can drill through walls and afterwards reseal them. Hence he simply has to determine whether there exists at least one safe spot after the cave is completely flooded. His gizmo and his superagency senses ensure that James will always reach such a place whenever it exists.

Input

Input starts with one line, containing an integer n , denoting the number of test cases (at most 100). Each test case starts with one line, containing two integers w and h ($2 \leq w, h \leq 100$), describing the width and height of the cave system. After that follow h lines, containing w characters, which are either cave (denoted by “`_`”, there is at least one cave on every map) or wall (denoted by “`#`”).

Output

For each test case, print one line, containing “SURVIVE” if there is at least one remaining safe space, or, if James Bond will drown, print “RIP”.

Sample Input 1

```
4
3 3
_#_
_#_
____
5 5
_##_
_###_
_#_#_
_###_
____
5 5
_####
_#___
_####
_#_#_
3 7
###
###
#_#
###
###
###
#_#
```

Sample Output 1

```
RIP
SURVIVE
RIP
SURVIVE
```