# Rubik cube

Can a Rubik's cube be solved by Restickering™?  
  
A popular method to pretend you can solve the Rubik's cube when no one's watching is to peel the stickers off and glue them back into place. It's not a very good method, as it tends to damage the stickers irreparably, but from a theoretical point of view it does the job.  
  
Feliks has left his scrambled cube on the table for only a few minutes, but as he comes back from his break, he notices an evil grin on Lucas's face. Has Lucas been messing around with the cube and spare stickers in a way that makes it unsolvable using the Restickering™ method? Help Feliks by telling him whether or not he can peel and glue the stickers back into place.  
  
You are given a cube state in pattern format. A solved cube looks like this:

UUU  
 UUU  
 UUU  
  
LLL FFF RRR BBB  
LLL FFF RRR BBB  
LLL FFF RRR BBB  
  
 DDD  
 DDD  
 DDD

Letters ULFRBD mean “this sticker belongs on the Up/‌Left/‌Front/‌Right/‌Back/‌Down face”.  
  
A monochrome cube, e.g. with only U stickers, is obviously unsolvable using the Restickering™ method.  
  
A cube where an R′ move (right face counterclockwise quarter turn, in standard notation) has been applied is solvable using the Restickering™ method and looks like the example below.

**Input**

11 lines (including 2 blank): a cube pattern

**Output**

SOLVABLE if it is possible to peel the stickers off and glue them back in a solved cube.  
UNSOLVABLE otherwise.

**Constraints**

Apart from the stickering, all cubes are standard 3×3×3 Rubik's cubes.  
Only valid sticker colors are provided.

**01**

R′

UUB

UUB

UUB

LLL FFU RRR DBB

LLL FFU RRR DBB

LLL FFU RRR DBB

DDF

DDF

DDF

SOLVABLE

**02**

Solved

UUU

UUU

UUU

LLL FFF RRR BBB

LLL FFF RRR BBB

LLL FFF RRR BBB

DDD

DDD

DDD

SOLVABLE

**03**

Pure White

UUU

UUU

UUU

UUU UUU UUU UUU

UUU UUU UUU UUU

UUU UUU UUU UUU

UUU

UUU

UUU

UNSOLVABLE

DUD

DUU

BDL

LLL UFF ULR FBF

LLR BFF URB DBF

FRD BUU BFB DBR

LRR

DDR

ULR

SOLVABLE

**05**

UF edge flip

UUU

UUU

UFU

LLL FUF RRR BBB

LLL FFF RRR BBB

LLL FFF RRR BBB

DDD

DDD

DDD

SOLVABLE

**06**

UFR corner twist

UUU

UUU

UUF

LLL FFR URR BBB

LLL FFF RRR BBB

LLL FFF RRR BBB

DDD

DDD

DDD

SOLVABLE

**07**

Random stickers

LRD

DFR

RBD

ULF LRB DBD LLB

RLL BUU BFD FFU

BDR URL UDF RFL

FBU

LRU

DFU

UNSOLVABLE

**08**

More random stickers

BDL

DBL

LUR

BFR BBD LUFDUR

UBR RRD DLDFUR

RBF FUU FRFBFD

UBF

LLD

LUR

UNSOLVABLE