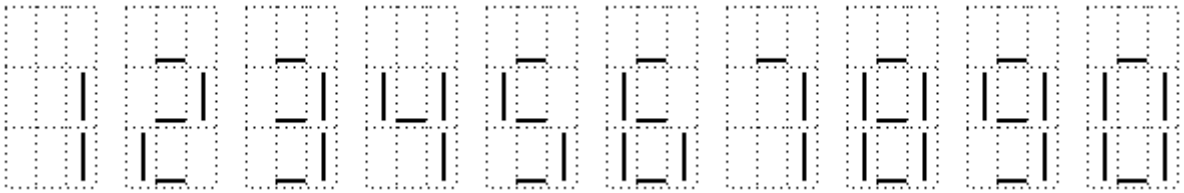
UVa Online Judge

433 Bank (Not Quite O.C.R.)

Banks, always trying to increase their profit, asked their computer experts to come up with a system that can read bank cheques; this would make the processing of cheques cheaper. One of their ideas was to use optical character recognition (ocr) to recognize bank accounts printed using 7 line-segments.

Once a cheque has been scanned, some image processing software would convert the horizontal and vertical bars to ASCII bars '|' and underscores '_'.

The ASCII 7-segment versions of the ten digits look like this:



A bank account has a 9-digit account number with a checksum. For a valid account number, the following equation holds: $(d_1 + 2 \times d_2 + 3 \times d_3 + \cdots + 9 \times d_9) \bmod 11 = 0$. Digits are numbered from right to left like this: $d_9 d_8 d_7 d_6 d_5 d_4 d_3 d_2 d_1$.

Unfortunately, the scanner sometimes makes mistakes: some line-segments may be missing. Your task is to write a program that deduces the original number, assuming that:

- when the input represents a valid account number, it is the original number;
- at most one digit is garbled;
- the scanned image contains no extra segments.

For example, the following input

```
    _  _     _  _  _  _  _
  | _| _||_||_ |_   ||_||_|
  | _  _|  | _||_|  ||_| _|
```

used to be "123456789".

Input

The input file starts with a line with one integer specifying the number of account numbers that have to be processed. Each account number occupies 3 lines of 27 characters.

Output

For each test case, the output contains one line with 9 digits if the correct account number can be determined, the string '`failure`' if no solutions were found and '`ambiguous`' if more than one solution was found.

Sample Input

```
4
    _  _     _  _  _  _  _
  | _| _||_||_ |_   ||_||_|
  | _  _|  | _||_|  ||_| _|

    _  _  _  _  _  _     _
|_||_|| || ||_   |  |  ||_
  | _||_||_||_|  |  |  | _|

 _  _  _  _  _  _  _  _  _
|_||_||_||_||_||_||_||_||_|
|_||_||_||_||_||_||_||_||_|

 _     _  _  _  _  _  _  _
|_|  ||_||_||_||_||_||_||_|
|_|  ||_||_||_||_||_||_||_|
```

Sample Output

```
123456789
ambiguous
failure
878888888
```