

Senior Division

Bits

PROBLEM: ACSL sometimes uses a short cut notation to show that multiple answers are possible. As an example ACSL would write 1*111 to represent the 2 bit strings 11111 and 10111.

INPUT: There will be 5 lines of input. Each line will contain a positive integer giving the number of bit strings to follow. That will be followed by that number of bit strings. The number of bit strings given will be at most 8. The length of each bit string will be at most 3. For each line, the bit strings will be of the same length.

OUTPUT: For each input line, print the bit strings in short hand notation so that only the given strings are represented. If that is not possible print "NONE".

SAMPLE INPUT

1. 2, 10, 11
2. 2, 001, 110
3. 2, 000, 001
4. 4, 00, 01, 10, 11
5. 4, 001, 101, 000, 100

SAMPLE OUTPUT

1. 1*
2. NONE
3. 00*
4. **
5. *0*