

A	Juglu The Runners-Up Footballer	Time Limit: 1 sec
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Juglu is one of the best footballer of AUST CSE. But he had never won the 'Winning Trophy' till now. As usual in yesterday's Final match, he was announced as the 'Man of the Tournament' but his team again got the 'Runners Up Trophy'. During the match, Juglu noticed that some of the players of his team were not giving their best. After some analysis he assume that they lost interest in Final because they didn't get their Jersey Number as they wanted.

To celebrate FIFA WORLD CUP'18, AUST is going to arrange an Intra Mini World Cup Tournament and Juglu wants to take the opportunity to win. But he doesn't want to face the same problem like before, so this time he wants to provide his teammates their favorite Jersey Number. He knows that each one of his teammates has a favorite number. Therefore, he wants to give his teammates the Jersey Number in such a way that the Jersey Number is a divisor of their favorite number.

If he has a squad of n teammates, each one of them should contain a distinct Jersey Number between 1 to n .

Input

Input starts with an integer T ($T \leq 100$) denoting the number of test cases. Each case starts with a line containing an integer n ($3 \leq n \leq 20$) denoting size of squad. Next line contain n integer a_i ($1 \leq a_i \leq 10^{18}$, $1 \leq i \leq n$) i -th player's favorite number.

Output

For each case, print the case number and if it is possible to fulfill the condition for all player then print n numbers where i -th number represent the jersey number of i -th player otherwise print "Again Runners-up". If there are multiple solutions then print the lexicographically smallest one.

Sample I/O

Input	Output
3	Case 1: 2 1 3
3	Case 2: 1 2 3
2 1 3	Case 3: Again Runners-up
3	
6 6 6	
3	
2 4 8	