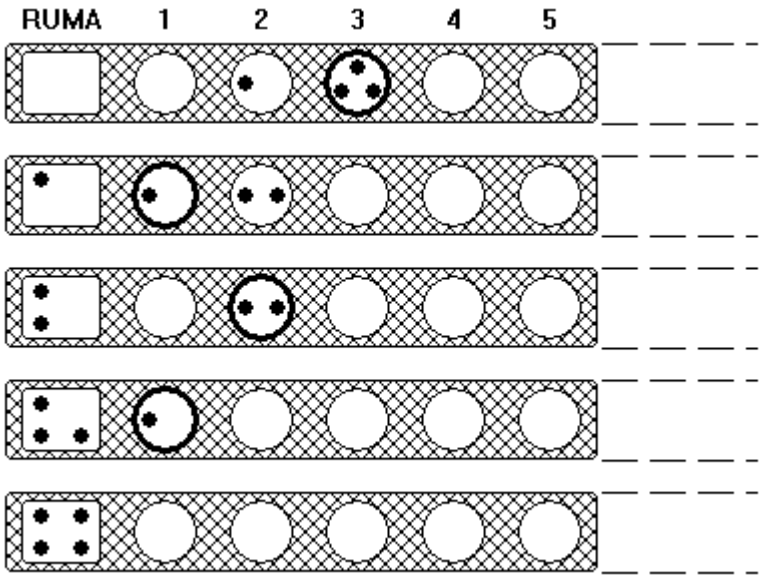
E • Mancala

Mancala is a family of board games played around the world, sometimes called *sowing* games, or *count-and-capture* games, which describes the game play. One simple variant is a solitaire game called *Tchoukaillon* which was described by Véronique Gautheron. *Tchoukaillon* is played on a board with an arbitrary number of bins numbered **1**, **2**, **…,** containing `b[1], b[2], . . .`, counters respectively and an extra empty bin called the *Roumba* on the left.



A single play consists on choosing a bin, ***n***, for which `b[n] = n` (indicated by the darker circles in the diagram) and distributing the counters one per bin to the bins to the left including the *Roumba* (getting the next diagram below in the figure above). If there is no bin where `b[n] = n`, then the board is a l*osing* board.

If there is a sequence of plays which takes the initial board distribution to one in which every counter is in the *Roumba*, the initial distribution is called a winnable board. In the example above, **0**,**1**,**3**,… is a winnable board (the "…" indicates all the bins to the right of **bin 3** contain **0**). For each total number of counters, there is a unique distribution of the counters to bins to make a winnable board for that total count (so **0**,**1**,**3**,… is the only winnable board with **4** counters).

Write a program which finds the winnable board for a total count input.

Input

The first line of input contains a single integer P, ($1 \le P \le 1000$), which is the number of data sets that follow. Each data set should be processed identically and independently.

Each data set consists of a single line of input. It contains the data set number, ***K,*** followed by a single space, followed by the total count ***N*** (**1** <= ***N*** <= **2000**) of the winnable board to be found.

Output

For each data set there will be multiple lines of output. The first line of output contains the data set number, ***K***, followed by a single space, followed by the index of the last bin, ***B***, with a non-zero count. Input will be chosen so that ***B*** will be no more than 80. The first line of output for each dataset is followed by the bin counts `b[1], b[2], … , b[`***B***`]` ,10 per line separated by single spaces.

Sample Input	Sample Output
3 1 4 2 57 3 500	1 3 0 1 3 2 12 1 2 2 2 2 6 2 4 6 8 10 12 3 39 0 2 2 1 3 2 2 2 6 7 5 0 6 12 2 6 10 14 18 1 3 5 7 9 11 13 15 17 19 21 23 25 27 29 31 33 35 37 39