Problem K. Kilk

Input file:	*standard input*
Output file:	*standard output*
Time limit:	2 seconds
Memory limit:	512 mebibytes

Find the number of strings consisting of x letters '`a`' and y letters '`b`' that have the length of their longest substring consisting of equal letters as small as possible under these conditions, and display it modulo 998 244 353.

Input

The first line contains a single integer t ($1 \le t \le 10^5$), denoting the number of test cases.

Each of the next t lines describes one test case and contains two integers x and y ($1 \le x, y \le 2000$).

Output

For each test case, display the required number.

Example

standard input	standard output
5 2 4 7 8 7 7 9 3 239 58	6 1 2 20 868098448

Note

In the first test case, the strings are `abbabb`, `bababb`, `babbab`, `bbaabb`, `bbabab`, `bbabba`. In each of these strings, the length of the longest substring consisting of equal letters is 2, and there are no strings consisting of 2 letters '`a`' and 4 letters '`b`' with a smaller value.