Problem M. Simple Math Problem

Input file:	*standard input*
Output file:	*standard output*
Time limit:	1 second
Memory limit:	256 mebibytes

Given two positive integers m and n, determine the value of the following formula modulo $998\,244\,353$:

$$\sum_{i=0}^{\lfloor \frac{m}{2} \rfloor} \sum_{j=0}^{\lfloor \frac{n}{2} \rfloor} \binom{i+j}{j}^2 \binom{m+n-2i-2j}{n-2j}.$$

Here, $\binom{a}{b}$ is a binomial coefficient (the number of ways to choose an unordered subset of b items from a fixed set of a items).

Input

The first line contains one integer T ($1 \le T \le 10^5$) denoting the number of test cases.

For each test case, the input is a single line containing two integers m and n ($1 \le m, n \le 10^5$).

Output

For each test case, output one line containing one integer: the value of the formula modulo $998\,244\,353$.

Example

standard input	standard output
2	30
1 9	80
2 6	