

Problem I. Ticket-punch

Input file: `punch.in`
Output file: `punch.out`
Time limit: 2 seconds
Memory limit: 256 mebibytes

Moscow Megapolice Departament of Public Transport decided to use ticket-punches in the airbuses and airmetro systems. Every passenger should insert rectangle ticket in ticket-punch and then receive it back with several square holes. A ticket-punch is a rectangle of $(2N + 1) \times (2M + 1)$ square cells. Let the rectangle rows be enumerated with integers from 1 to $2N + 1$ and columns with integers from 1 to $2M + 1$. Some cells with both even coordinates (at least one but, maybe, not all such cells) have square pins on them. These cells define the pattern of the ticket-punch. When a ticket is punched, each pin makes a square hole in the ticket. A ticket-punch can punch a ticket if every pin will make a hole, that is, every pin is strictly inside the ticket.

To prevent using one ticket more than once, each bus must have its own ticket-punch. Two ticket-punches are considered different if and only if their patterns cannot be matched using rotations, translations and/or reflections.

Given N and M , find the number of different ticket-punches of size $(2N + 1) \times (2M + 1)$ modulo $10^9 + 7$.

Input

The input contains several test cases. Each test case consists of one line containing two integers N and M ($1 \leq N, M \leq 1000$). The input file ends with the test case $N = M = 0$ which should not be processed. There are no more than 100 000 test cases in a single test (not including the terminating $N = M = 0$ case).

Output

For each test case, print the number of different ticket-punches of size $(2N + 1) \times (2M + 1)$ modulo $10^9 + 7$.

Example

<code>punch.in</code>	<code>punch.out</code>
2 2	5
2 3	19
0 0	