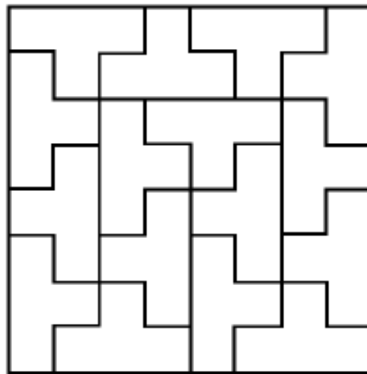
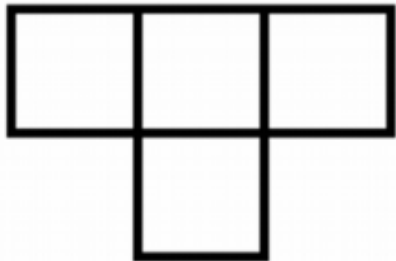


Given an  $N \times M$  rectangle, compute the number of tilings (complete coverings) with the following piece with 4 blocks (on the left):



Note that the piece can be rotated and flipped but not cut. An example tiling of an  $8 \times 8$  rectangle is given above right.

### Input

A number of inputs ( $\leq 100$ ), each line with  $N$  and  $M$  ( $4 \leq N \leq 24$ ,  $4 \leq M \leq 10^9$ ). Additionally, we stipulate the condition that both  $N$  and  $M$  are integer multiples of 4 (i.e.  $4|N$  and  $4|M$ ).

### Output

For each input, output the answer *modulo* 1000000007 on one line.

### Sample Input

```
4 4
4 8
```

### Sample Output

```
2
6
```