

## Output

For each test case, output a line in the form "Case #**x**: **A**", where **x** is the case number, starting from 1, and **A** is the number of valid grids of the specified size.

## Limits

Memory limit: 1GB.

$$1 \leq T \leq 50$$

### Small dataset (Test set 1 - Visible)

Time limit: 30 seconds per test set.

$$4 \leq N, M \leq 10$$

### Large dataset (Test set 2 - Hidden)

Time limit: 120 seconds per test set.

For 80% of the test cases,  $4 \leq N, M \leq 50$

For 90% of the test cases,  $4 \leq N, M \leq 70$

For all test cases,  $4 \leq N, M \leq 100$

## Sample

### Sample Input

```
3
4 4
4 6
5 5
```

### Sample Output

```
Case #1: 24
Case #2: 44
Case #3: 48
```