Problem 3 – Alternative Routes

As a college student Professor Plum worked one summer as a traveling salesperson. Unfortunately, Professor Plum was fired for taking too long to plan his routes. As he walked home from his (former) office, he took great solace in counting the number of routes he might take to arrive home. For example, if his home was 2 blocks south and 3 blocks east, he has exactly 10 routes to choose from:
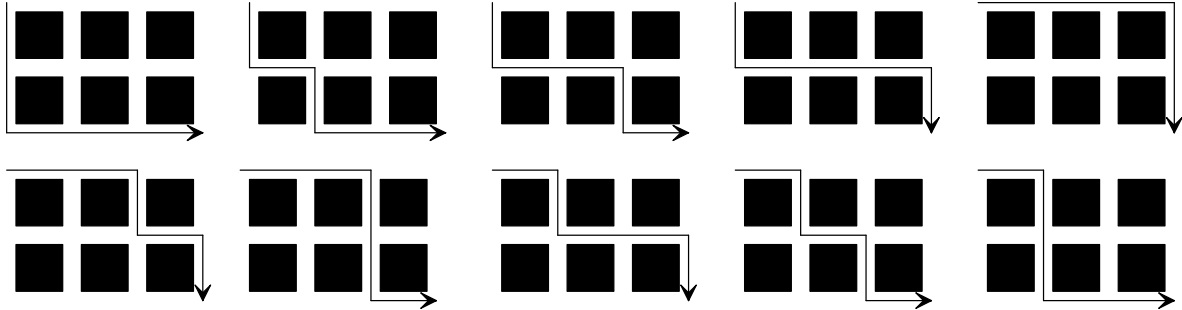

Figure 2: The possible routes from the office at the top-left corner to Plum's home at the bottom-right.

Professor Plum strives to be efficient, so he'll never take a turn that will lead him away from his home. Compute the number of routes that Professor Plum can take for a collection of distances between the office and his home. The number of routes will always fit in a 64-bit integer.

Input
The first line contains the number of neighborhood configurations. Each of the following lines specifies a neighborhood configuration by two integers: neighborhood's width followed by its height. For example, the first neighborhood in the example input below is 3x2, as shown in the figure above.

```
2
3 2
20 4
```

Output
For each neighborhood, print to standard output a case label and the number of routes Profess Plum may take to get home. For the example input given above, the output is:

```
Case 1: 10
Case 2: 10626
```