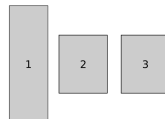


# Problem A - Fitting rectangles

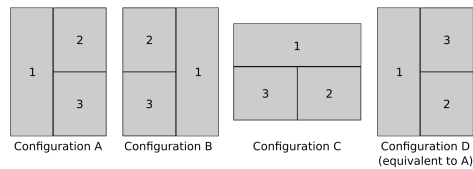
## Description

Fitting rectangles is a game where the player is given a set of small rectangles and needs to create a large rectangle, using all small rectangles exactly once.

For example, if the player is given the following 3 small rectangles:



A few possible ways to make a large rectangle would be:



Your task is to find out how many **distinct** configurations there are to create a large rectangle given the list of small rectangles.

Two configurations are not distinct if, by removing the indices of the small rectangles, we are not able to visually distinguish them; this is the case for configurations A and D.

Note that you can rotate rectangles, as can be seen in configuration C

## Input

Each test case starts with a line with an integer  $1 \leq n \leq 8$ , the number of small rectangles.

The following  $n$  lines contain two integers each,  $w_i$  and  $h_i$ , the width and height of the  $i$ th rectangle respectively,  $1 \leq i \leq n$ .

## Output

For each test case, print the number of distinct configurations, it is guaranteed that no more than 10000 solutions exist.

## Example

**Example input:**

## Problem A - Fitting rectangles

```
3
40 120
50 60
50 60
```

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**Example output:**

```
4
```