

# Problem PUTZER: Putzer's Punctuality

The General, patriot ex officio, was recently truly concerned because of the banner shortage in Germany. As long as the national soccer team kept winning the people suffered from an unsatisfiable demand on German banners, and not long after the beginning of the soccer world cup all banners were sold out.

Thus The General used his staff to help manage the crisis. All soldiers were required to temporarily remove their German badges from their uniform and distribute them among the people to alleviate their distress.

"Gentlemen", The General said, "we have about 684,000 badges from uniforms for disposal, I suggest we divide the country in equal parts and deliver the badges in equal parts.

Now I need your advice on how to proceed: Dividing Germany into two parts with 342,000 badges each is politically incorrect; dividing Germany into 16 parts with 42,750 badges per region is maybe more favourable, but on the other hand in both cases there are no badges for the decoration of our barracks left..."

The General went on introducing alternatives, while Captain Putzer entered the room: "Hm, how many badges are for disposal?" The General snarled: "Count 'em, Captain!"

Help Putzer out of this embarrassing situation by prompting him the correct answer.

## Input

The input starts with a line containing a single integer number  $1 \leq n \leq 5000$ , the number of test cases.

The following lines give the test cases, where each test case has the following layout:

A single line with an integer  $1 \leq k \leq 10$  that denotes the number of alternative plans of The General, followed by  $k$  lines with 2 integer numbers each - the number of parts the map is divided and the number of batches that are in this case left for the barracks.

## Output

Print for each test case a single number in a single line - the smallest possible (positive) number that fits the speech of The General. Every test case has a solution, and any solution will fit in a 32-bit integer.

### Sample Input 1

```
3
1
3 2
2
3 2
2 1
2
4 2
8 2
```

### Sample Output 1

```
2
5
2
```