ASTU ICPC Club
prob:Conference

The Problem

You are a smart hotel manager that hosts conferences, because everyone waits till the last minute you have decided to make scheduling conferences on short notice more expensive. You have a series of offers for the next 30 day. Each requires full control of your hotel so you may only host one conference on any given day. To help you out, you will never get more than one request for a conference that starts on any given day. In addition you must host the entire conference, i.e. you may not host the first 2 days of a 3 day conference. You will make the cost of each day half that of the previous day. The first day (day 0) will cost \$536,870,912 or ($\$2^{29}$). The second day (day 1) will cost half, \$268,435,456 or ($\$2^{28}$). Assume each group is willing to pay whatever your price is. What is the most money you can make in the next 30 days?

The Input

You will be given an integer t ($1 \leq t \leq 1000$), the number of test cases that will follow. Each test case will start with an integer n ($1 \leq n \leq 30$), the number of conference offers. Each of the next n lines will contain 2 integers S($0 \leq S \leq 29$) and L($1 \leq L+S \leq 30$). The number S represents the start day of the conference and the number L represents the length of the conference. *Each start day will be unique.*

The Output

For each case output a line containing a single integer representing the maximum amount of money you can make, in dollars.

Sample Input

```
4
1
15 1
2
0 30
5 25
2
0 1
1 29
2
20 2
25 2
```

Sample Output

```
16384
1073741823
1073741823
792
```