

## 1008.Shinobu Loves Segment Tree

Input file:            **standard input**  
 Output file:         **standard output**  
 Time limit:          2 seconds  
 Memory limit:       256 megabytes

As a cold-blooded, hot-blooded, and iron-blooded vampire, Shinobu likes to build segment trees.

She uses the *build()* function to build a segment tree, and the process of building the segment tree will increase the value of some numbers.

The specific content of the *build()* function is as follows:

```
void build(int id, int l, int r) :
|   value[id] += r - l + 1;
|   if(l == r) return;
|   int mid = (r + l)/2;
|   build(id * 2, l, mid);
|   build(id * 2 + 1, mid + 1, r);
|   return;
```

For example, if Shinobi calls *build*(1, 1, 2) once, then *value*[1] will increase by 2, *value*[2] and *value*[3] will increase by 1.

In the long life of a vampire, Shinobu builds a segment tree every day. She has been doing this since day 1, and on the  $i_{th}$  day, she will call *build*(1, 1,  $i$ ) to build a segment tree.

As a fan of Shinobi, playf got a fan number  $x$ . Now he wants to ask you a question: what the *value*[ $x$ ] will be at the end of the  $n_{th}$  day ?

### Input

The first line of the input contains a single integer  $t(1 \leq t \leq 10^5)$  — the number of test cases.

Each of the next  $t$  lines contains two integers  $n, x(1 \leq n \leq 10^9, 1 \leq x \leq 4 \times n)$  — playf's question.

### Output

For each question, print one line contains one integer — the answer to the  $i_{th}$  question.

### Examples

standard input	standard output
3	1
2 3	2
3 3	4
4 3	
1	9
26 49	
3	0
1000000000 4000000000	500000000500000000
1000000000 1	4004478229
11451419 19810	