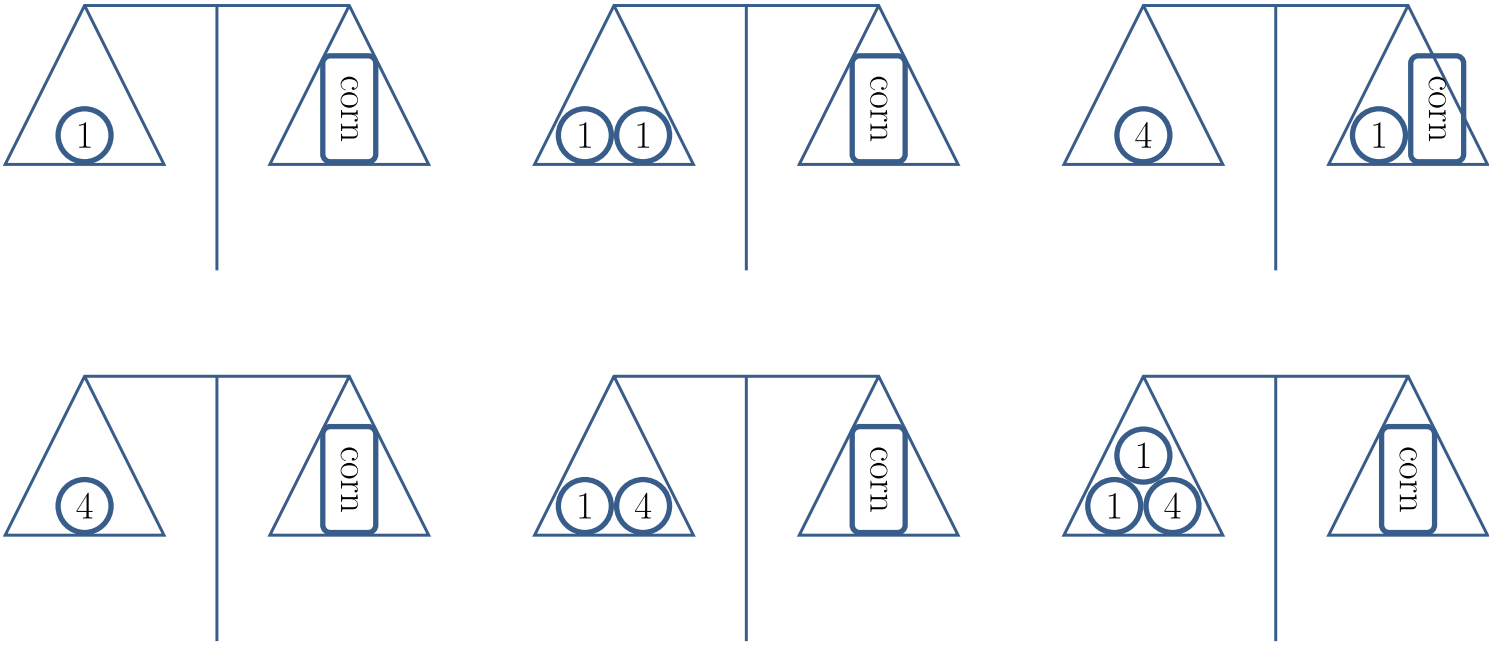
ECOO '13 R2 P4 - Breaking Rocks

Time limit: 13.0s **Memory limit:** 64M

Farmer Jane needs to be able to measure out corn to feed her cows, but all she has to help her is a primitive balance scale and a 6 kilogram rock. With this rock she could use the balance scale to measure out 6 kg of corn, but she often needs to measure out smaller quantities. She figures out that if she breaks the rock into three pieces, where two of them are 1 kg and the third is 4 kg, then she can measure out all integer quantities of corn from 1 to 6, as shown below.



Farmer Jane is happy now, but the situation gets her thinking. She knows she could have broken the rock into 1, 2, and 3 kg pieces and this would also have worked. But things are not so simple for other numbers. For example, there are 15 ways to break a 12 kg rock into 4 integer pieces but only 9 of them let you measure all integer weights from 1 to 12. She wonders if there could be some kind of algorithm to determine how many combinations work for a given size of rock and a given number of pieces...

The input contains 10 test cases.

Each test case consists of two integers (P and R) on a single line separated by a space. The integer P gives the number of pieces to break the rock into and the integer R gives the original size of the rock. For all test cases, $1 \leq R \leq 100$.

For the first 5 test cases $3 \leq P \leq 5$ and for the next 5 test cases $6 \leq P \leq 10$.

Your job is to output a single line for each test case indicating the number of ways you can break up the rock into P integer-sized pieces so that all possible integer weights from 1 to R can be measured on a balance scale.

Sample Input

```
3 6
4 12
4 30
5 40
5 5
6 25
7 55
8 65
9 75
10 85
```

Sample Output

```
2
9
5
137
1
154
5749
28051
121108
474402
```