

2388 - Bytelandian Divisors

Description

Byteland is a fictitious city commonly mentioned in the programming problems, and bytelandians are its citizens.

Bytelandians have a very distinctive method of dividing things, since they are binary beings they want to divide everything by two(2). Right now they are dividing some stickers into boxes, but remember: they divide their own way. For example, if they have 14 stickers and want to put them into boxes that can carry 3 stickers maximum, they divide them in two groups of seven (7) (this process continues for each group until that group fits in the box), now each group of seven they divide it in two groups, one of 4 stickers and the other of 3 (because 7 is an odd number), up to now we have 4 groups, 2 groups of 3 stickers and 2 of 4 stickers, since the groups of 3 stickers already fit into one box, they pack it immediately, but the other groups of 4 they divide them into 2 groups of 2 stickers each. resulting in 4 groups of 2 stickers, totaling 6 boxes(two groups of 3 stickers plus 4 groups of 2 stickers).

Now they hired you to make a program for them, so that the program tells them how many boxes will be needed, following their method.

Input specification

The first number is **T** ≤ 1000 , the number of test cases, written in one line. Then **T** lines follow with two space separated integers **B**, **C** ($1 \leq B, C \leq 10000$) denoting the number of stickers to pack and the box capacity, respectively in this order.

Output specification

For each test case, output one line with one integer denoting the amount of boxes bytelandians will need for that case.

Sample input

```
3
14 3
14 2
256 1
```

Sample output

6
8
256

Hint(s)

Source	TBA
Added by	kojak
Addition date	2013-05-10
Time limit (ms)	8000
Test limit (ms)	2000
Memory limit (kb)	130000
Output limit (mb)	64
Size limit (bytes)	15000
Enabled languages	Bash C C# C++ Java Pascal Perl PHP Python Ruby Text