

Shortcut

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Into the new level, a witch provides an option to Mario, so that he can avoid the intense battle ahead in this level. He needs to perform a task on a sheet of paper provided by the witch. He needs to cut a rectangular area out of them so that the ratio of height to width (i.e. the height/width quotient) can vary from 0.8 to 1.25 inclusively. Besides, at least one side of the cut area should have a size, equal to some power of number 2 (2^x for some integer x). If those rules don't indicate the size of the cut area clearly, then the way with which the cut part possesses the largest area is chosen. Of course, both sides of the cut area should be integer. If there are several answers to this problem, he must choose the answer with the maximal height.

Input

The first line contains number of test cases T ($T \leq 50$)

The next lines contain a pair of integers x and y ($1 \leq x, y \leq 10^9$) which are the height and width of the sheet.

Output

T lines of two integers which are the height and width of the cut area.

Sample I/O

Input

```
2
2 1
2 2
```

Output

```
1 1
2 2
```