

Binary Palindromes Set

Given two integers A and B, write a program to find out all the numbers whose binary value is a palindrome in that range. Your input will be the range of numbers to check for palindrome i.e. the start and end value of the range. Your output will display all the numbers whose binary value is a palindrome. It is also important to note that you shall treat a binary number as palindrome, only while considering the minimum no of bits required to represent the number. In other words, ignore all leading zeros. E.g. 6, which can be represented as 0110 is not a palindrome, because if you ignore the leading zeroes, you have only 110.

Input

First line of input is no. of test cases T. T lines of input follow, each having 2 integers A and B. A and B denote the upper and lower limit of your range (both inclusive) for the problem.

$$0 \leq T \leq 10000$$

$$0 \leq A, B \leq 2147483647$$

Output

For each test case, print it's output in a new line. When there are more than 1 integers in the answer, print them separated by a single space in ascending order. If there is no answer, just print "none".

Example

Input:

2

3 7

10 14

Output:

3 5 7

none