THE FIRST BATTLE

L always wanted to be better than Light ...
So for now they both have swords whose power intensity is L and M , where value of L is always smaller or equal to M.
Now according to the Note both L's and Light's sword's power intensity (Value of L and M respectively) gets doubled after each decade .
But there is a twist in the plot . L got a special sword which replicated L's previous sword but its power intensity increased by three times each decade .

Now tell us after how many decades will L overpower Light with his new sword i.e when will value L become strictly greater than M.

Input :
The first line of input contains **T** , the number of test cases . Then T lines follow and each line will contain value L and M.

Output:
Print One Integer denoting after how many decades will value of L be strictly greater than M.

Constraint :
1 <= T <= 100
1 < = L,M <= 100

Example :
Input :
3
4 7
4 9
1 1
Output:
2
3
1