Problem Even Divisor

Time Limit 1 second

Problem

For the given number with prime factorization $X = P_1{}^a . P_2{}^b . \dots . P_k{}^r$ how many even divisors have.

$2 <= X <= 10^{18}$

Input

Input begins with an integer $1 \le t \le 100$, indicating the number of test cases that follow. For each testcase the first line contain integer K, for the next K lines there are two integers P_i and a the base and exponent of the prime factorization of the number X respectively.

Output

For each test case, output a line containing integer representing the number of even divisors.

Sample Input 1	Sample Output 1
2 3 3 2 5 1 7 3 4 2 2 3 4 5 2 11 1	0 60