3229 Graceful Prime Decomposition

We want to express a positive integer N as a sum of prime numbers. Let $G(N, K)$ denote the number of ways of decomposing a positive integer N *gracefully* using p_i, which is a prime number less than or equal to K. That means a positive integer N is expressed as the sum of prime numbers in the following form. Note that the smallest prime number is 2.

$$N = p_1 + p_2 + p_3 + \cdots + p_r, \qquad \text{where } p_i \leq K$$

And there is another constraint in this prime decomposition. This *graceful* constraint forces that every pair of adjacent prime numbers should be different, saying $p_i \neq p_{i+1}$ for all i.

We call this constrained decomposition the *Graceful Prime Decomposition* (GPD). Each GPD can be denoted as $N = (p_1, p_2, p_3, \ldots, p_r)$ simply. Let us give two examples for $G(7, 5)$ and $G(5, 5)$.

$G(7,5)$	
$7 = 2 + 3 + 2$	$\rightarrow (2, 3, 2)$
$= 2 + 5$	$\rightarrow (2, 5)$
$= 5 + 2$	$\rightarrow (5, 2)$

$G(5,5)$	
$5 = 2 + 3$	$\rightarrow (2, 3)$
$= 3 + 2$	$\rightarrow (3, 2)$
$= 5$	$\rightarrow (5)$

So we get $G(7, 5) = 3$ and $G(5, 5) = 3$. Note that "2 + 5" is not considered to be same to "5 + 2" in our GPD. Also, $7 = 2 + 2 + 3$ cannot be regarded as a correct GPD since there is an identical prime number pair in the decomposition sequence such as "2+2". You should notice that "2+3+2" is a correct GPD, but "3+2+2" can not be a valid GPD. Your task is to compute $G(N, K)$ for two positive integers N and K given.

Input

The input consists of T test cases. The number of test cases T is given in the first line of the input file. Each test case starts with a line containing two integers N and K, where $2 \leq N, K \leq 50$.

Output

Print exactly one integer $G(N, K)$ for each test case.

Sample Input

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3
7 5
5 5
8 2
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Sample Output

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3
3
0
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