Odd Numbers of Divisors

Given a positive odd integer K and two positive integers low and high, determine how many integers between low and high contain exactly K divisors.

Input

The first line of the input contains a positive integer C (0 < C < 100,000), the number of test cases to follow. Each case consists of a line containing three integers: K, low, and high (1 < K < 10000, 0 < low ≤ high < 10^10). K will always be an odd integer.

Output

Output for each case consists of one line: the number of integers between low and high, inclusive, that contain exactly K divisors.

Example

Input:
3
3 2 49
9 1 100
5 55 235

Output:
4
2
1