A **numerical triad** of limit N is a set of 3 numbers A, B and C where $0 \leq A, B, C \leq N$. A numerical triad of limit N is considered a **beautiful triad** in base K, if and only if all the pairs that can be formed between their values A, B and C differ by no more than K units.

For example $(4, 4, 6)$ is a beautiful triad in base 3 because the difference between A and B is 0, the difference between A and C is 2 and the difference between B and C is 2, all differences being less than 3. However, this is not a beautiful triad in base 1, because two of their differences are greater than 1.

Knowing N and K, can you tell how many different beautiful triads of limit N in base K can be formed? Note that $(4, 4, 6)$, $(4, 6, 4)$ and $(6, 4, 4)$ are three different triads.

Input

The first line of the input contains an integer T, the number of test cases. Each case contains two integers N and K as described previously ($0 \leq N \leq 2{*}10^9$, $0 \leq K \leq 1000$, $K \leq N$).

Output

Print one line per test case, the number of beautiful triads of limit N in base K that can be formed. It is guaranteed that this number fits in a 64 bits signed integer.

Sample Input

```
5
0 0
1 0
1 1
2 1
2000000000 0
```

Sample Output

```
1
2
8
15
2000000001
```