

8499 Chat Group

It is said that a dormitory with 6 persons has 7 chat groups ‘^_^’. But the number can be even larger: since every 3 or more persons could make a chat group, there can be 42 different chat groups.

Given N persons in a dormitory, and every K or more persons could make a chat group, how many different chat groups could there be?

Input

The input starts with one line containing exactly one integer T which is the number of test cases.

Each test case contains one line with two integers N and K indicating the number of persons in a dormitory and the minimum number of persons that could make a chat group.

Output

For each test case, output one line containing ‘Case # x : y ’ where x is the test case number (starting from 1) and y is the number of different chat groups mod 1000000007.

Limits:

- $1 \leq T \leq 100$.
- $1 \leq N \leq 10^9$.
- $3 \leq K \leq 10^5$.

Sample Input

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1
6 3
```

Sample Output

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Case #1: 42
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