

Problem H. Military Service

Program: soldiers.(cpp|java)
Input: soldiers.in
Balloon Color: Red

You have just started your military service with the border guards. Since you are a Computer Science graduate, they asked you to implement a schedule for the soldiers. Initially no soldier is on duty and you need the schedule to satisfy 2 requirements:

- There are N soldiers, each soldier can be on duty for at most K continuous months and then he must take one month of vacation.
- The schedule needs to make sure that the guaranteed minimum number of soldiers on duty at any given time is maximized.

Given N and K , the system will calculate the maximum guaranteed number of soldiers to be on duty at any given time.

Input

Your program will be tested on one or more test cases. The first line of the input will be a single integer T , the number of test cases ($1 \leq T \leq 100$).

Each test case consists of a line containing 2 space separated integers:

- N : The number of soldiers ($0 \leq N \leq 10,000,000$)
- K : The number of continuous months a soldier can be on duty before they have to take a month of vacation ($0 \leq K \leq 10,000,000$).

Output

For each test case, print a single line containing the maximum guaranteed number of soldiers on duty at any given time.

Examples

soldiers.in	stdout
3	2
4 1	6
9 3	15
21 3	