Robbery 2

k bandits robbed a bank. They took away **n** gold coins. Being a progressive group of robbers they decided to use the following procedure to divide the coins. First the most respected bandit takes **1** coin, then the second respected takes **2** coins, ..., the least respected takes **k** coins, then again the most respected takes **k+1** coins, and so on, until one of the bandits takes the remaining coins. Calculate how much gold each of the bandits gets.

Input

The first line of the input contains number **t** – the amount of tests. Then **t** test descriptions follow. Each test consists of two integers **n** and **k** - the amount of coins and bandits respectively.

Constraints

1 <= **t** <= 500
10^6 <= **n** <= 10^{15}
2 <= **k** <= 100

Output

For each test print the amounts of coins each bandit gets separated by spaces.

Example

Input:
3
1000000 2
1234567 3
123456789 4

Output:
499849 500151
411602 411887 411078
30869901 30858368 30862296 30866224