Robbery

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, ans 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

$1 <= t <= 500$
$1 <= n <= 10^9$
$2 <= k <= 100$

Output

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

Example

Input:
3
10 2
11 3
12 4

Output:
4 6
5 3 3
3 2 3 4