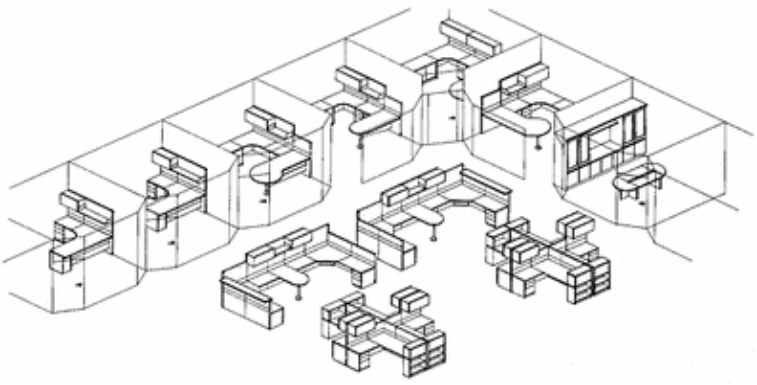
UVa Online Judge

10581 Partitioning for fun and profit



A partition of a positive integer number m into n elements ($n \leq m$) is a sequence of positive numbers $a_1, \ldots, a_n$ such that $a_1 + \ldots + a_n = m$ and $a_1 \leq a_2 \leq \ldots \leq a_n$. Your task is to find a partition of a number m which occupies the k-th position in the lexicographically ordered sequence of all partitions of m into n elements.

The lexicographic ordering among the partitions of a number is defined as follows. For two partitions a and b of m into n elements such that $a = [a_1, \ldots, a_n]$ and $b = [b_1, \ldots, b_n]$ we have $a < b$ if and only if there exists an $1 \leq i \leq n$ such that for all $j < i$ we have $a_j = b_j$ and $a_i < b_i$. The sequence of all partitions is ordered in increasing lexicographic order and at the first we have the following sequence $1, 1, \ldots, 1, m - n + 1$.

Input

The first line of input contains a number c giving the number of cases that follow. Each of the subsequent c lines contains three numbers: $1 \leq m \leq 220$, $1 \leq n \leq 10$ and $1 \leq k$ which is not bigger than the number of partitions of m into n elements.

Output

For each input data set print the k-th partition of m into n elements. Each element of a partition is to be printed in a separate line.

Sample Input

```
2
9 4 3
10 10 1
```

Sample Output

```
1
1
3
4
1
1
1
1
1
1
1
1
```

```
1
1
```