CCC '96 S3 - Pattern Generator

Time limit: 2.0s   **Memory limit:** 256M

Write a program that repeatedly reads two numbers n and k and prints all bit patterns of length n with k ones in descending order (when the bit patterns are considered as binary numbers). You may assume that $0 < n \leq 30$, $0 \leq k < 8$, and $k \leq n$. The first number in the input gives the number of pairs n and k. The numbers n and k are separated by a single space. Leading zeroes in a bit pattern should be included. See the example below.

Sample Input

```
3
2 1
2 0
4 2
```

Sample Output

```
The bit patterns are
10
01

The bit patterns are
00

The bit patterns are
1100
1010
1001
0110
0101
0011
```