Numbers
Input File: NumbersIn.txt

Paranoid Paul has invented a new scheme for encrypting 32 bit integer data that he transmits to his friend Skyler. The scheme begins with the selection of an integer encryption key, n, in the range $1 \leq n \leq 4$. Then adjacent bits of the integer to be encrypted are grouped into 2^n bit groupings, and the position of each adjacent pair of groupings is swapped to form the encrypted number. For example, the unencrypted and encrypted versions of the integer 16,711,850 using an encryption key of n = 3, is shown below.

```
00000000111111110000000010101010  Unencrypted
11111111000000001010101000000000  Encrypted
```

After the encryption, the encryption key n and the encrypted number are transmitted to Skyler for decryption. Your task is to produce the encrypted version of an integer given the integer and the encryption key, n.

Inputs
The first line of input contains the number integers to be encrypted. This is followed by one line of input per number to be encrypted, that contains the value of the encryption key n (in the range $1 \leq n \leq 4$) to be used in the encryption, followed by the integer to be encrypted.

Outputs
There will be one line of output per encrypted number containing three integers: the number to be encrypted, followed by the value of the key (n) used in the encryption, followed by the encrypted version of the number. All outputs will be separated by one space.

Sample Inputs
```
6
1 195
3 16711850
2 15
3 195
4 15
1 -1
```

Sample Outputs
```
195 1 60
16711850 3 -16733696
15 2 240
195 3 49920
15 4 983040
-1 1 -1
```