Problem 7
Combinations

Generate all the r-combinations with repetitions that can be made with n objects, {1…n}.

An r-combination with repetition is a group of r objects from the given n in which:

- Each object is a number between 1 and n.

- Multiple instances of the same number can occur.

Example: for r = 4, n = 4

1112
1234
2222
4444
2334
…

Note: the order does not matter, 1112 is equivalent to 2111.

Input

The input will be the single pair r and n.

Output

The output should consist of two things. First, a file containing the all of the r-combinations, with no repeating combinations (note: 1112 and 2111 are considered repeating). Second, your program should print the number of unique r-combinations generated.

Sample input

```
2 2
```

Sample output

```
4
```

Sample output file (output.txt)

```
11
12
21
22
```