

# Problem H. Divide and Conquer

**Time limit** 1000 ms

**Mem limit** 65536 kB

$$\frac{(n+1)n}{2} + 1$$

It is well known that  $n$  points can divide the line to at most  $n+1$  parts, and  $n$  lines can divide the plane to at most parts. This facts have always impressed Buddy. But recently he has learned about higher-dimensional spaces and this impressed him much more!

Now Buddy wonders how many parts can  $n$  hyperplanes divide  $m$ -dimensional space to. His elder brother Dubby told him that for each  $m$  this number can be represented as a polynomial for  $n$  with rational coefficients. Help him to find this polynomial.

## Input data

Input file contains  $m$  ( $1 \leq m \leq 18$ ).

## Output data

On the first line of the output file print the degree of the polynomial. On the second line output coefficients of the polynomial, sepearted by spaces. Coefficients must be listed starting from the leading one. All coefficients must be printed as irreducible fractions, if some coefficient is negative, minus sign must preceed its nominator, not denomimator.

## Examples

Input	Output
1	1 1/1 1/1