

## Problem 6: Fractals Against Programmability

### 7 Point(s)

Problem ID: fractal

Rank: 2

## Introduction

It turns out that building a real house of cards with real cards bought with real money is too expensive, and building a plain digital house of cards is not very impressive, so you decide to build a digital house of cards that's cool and recursive instead!

## Problem Statement

Output a fractal house of cards with  $N$  layers.

The simplest fractal house of cards with 1 layer consists of just two cards leaning on each other in a single line, drawn with a forward slash / and a backslash \:

```
/\
```

To construct a fractal house of cards with  $k$  layers where  $k$  is a power of 2, build three fractal houses of cards with  $k / 2$  layers in an equilateral triangle pattern by inserting spaces so that each house is aligned correctly. For example, here is a fractal house of cards with 8 layers:

```
  /\
 /\
/\  /\
/\  /\  /\
/\  /\  /\  /\
 /\      /\
/\  \    /\  \
/\  \    /\  \
/\  \    /\  \
/\  \    /\  \
/\  \    /\  \  /\  \
```

See the sample test cases below for more examples.

## Input Format

The first line of input contains a positive integer  $T$  denoting the number of test cases that follow. Each test case consists of a single line containing a positive integer  $N$  denoting the number of layers in the fractal house of cards you're trying to build.

## Output Format

For each test case, output the following:

- The first  $N$  lines should contain the fractal house of cards
  - Each line should contain the forward slashes `/`, backslashes `\`, and spaces for each layer
  - The house is allowed to have trailing spaces on the right side of each layer
- The final line should be blank to separate individual test cases

## Problem Constraints

$$1 \leq T \leq 100$$

$$1 \leq N \leq 256$$

$N$  is a power of 2.

The sum of  $N^2$  across all test cases in an input does not exceed  $10^5$ .

# Sample Test Cases

## Sample Input

5  
1  
2  
4  
8  
16

## Sample Output

