You a given a number **N**. You need to print the pattern for the given value of **N**.

for **N=2** the pattern will be

2 2 1 1

2 1

for **N=3** the pattern will be

3 3 3 2 2 2 1 1 1

3 3 2 2 1 1

3 2 1

Input Format:

The first line of input is the number of testcases **T**. The T test cases follow. The first line of each test case is an integer **N**.

Output Format:

For each test case, in a new line, print the required pattern in a singleline .

Note : Instead of printing new line print a **"$"** without quotes.

Your Task:

Since this is a function problem, you don't need to worry about the testcases. Your task is to complete the function **printPat** which takes one argument 'N' denoting the length of the pattern.

Constraints:

1 <= T <= 20

1 <= N <= 40

Example:

Input

2

2

3

Output

2 2 1 1 $2 1 $

3 3 3 2 2 2 1 1 1 $3 3 2 2 1 1 $3 2 1 $

Note: The **Input/Ouput** format and **Example** given are used for system's internal purpose, and should be used by a user for **Expected Output** only. As it is a function problem, hence a user should not read any input from stdin/console. The task is to complete the function specified, and not to write the full code.

** For More Input/Output Examples Use ['Expected Output'](#) option **