Jim is doing his discrete maths homework which requires him to repeatedly calculate ${}^{n}C_{r}$(n choose r) for different values of n. Knowing that this is time consuming, he goes to his sister June for help. June, being a computer science student knows how to convert this into a computer program and generate the answers quickly. She tells him, by storing the lower values of ${}^{n}C_{r}$(n choose r), one can calculate the higher values using a very simple formula.

If you are June, how will you calculate ${}^{n}C_{r}$ values for different values of n?

Since ${}^{n}C_{r}$ values will be large you have to calculate them modulo 10^9.

Input Format
The first line contains the number of test cases T.
T lines follow each containing an integer n.

Output Format
For each n output the list of ${}^{n}C_{0}$ to ${}^{n}C_{n}$ each separated by a single space in a new line. If the number is large, print only the last 9 digits. i.e. modulo 10^9

Constraints
1<=T<=200
1<=n< 1000

Sample Input

```
3
2
4
5
```

Sample Output

```
1 2 1
1 4 6 4 1
1 5 10 10 5 1
```

Explanation
For 2 we can check ${}^{2}C_{0}$ ${}^{2}C_{1}$ and ${}^{2}C_{2}$ are 1, 2 and 1 respectively. The other inputs' answer follow similar pattern.