Working in a boutique folding and putting in order T-shirts according to their sizes seems very easy. But is it really so simple?

Given n objects of different sizes, how many different arrangements can be done using relationships '¡' and '='?

For instance, with 2 objects, A and B, we have 3 possible arrangements:

A=B A¡B B¡A

With 3 objects, A, B and C, you must conclude that 13 different arrangements exist:

A=B=C A=B¡C A¡B=C A¡B¡C A¡C¡B A=C¡B B¡A=C B¡A¡C B¡C¡A B=C¡A C¡A=B C¡A¡B C¡B¡A

Input

The first line of the input contains an integer, t, indicating the number of test cases. For each test case, one line appears, that contains a number n, $1 \leq n \leq 11$, representing the number of objects.

Output

For each test case, the output should contain a single line with the number representing the different arrangements you can do with n objects.

Sample Input

```
4
1
2
3
4
```

Sample Output

```
1
3
13
75
```