3392 - Triangular Sums

North America - Greater New York - 2006/2007

The n-th Triangular number, $T(n) = 1 + ... + n$, is the sum of the first n integers. It is the number of points in a triangular array with n points on side. For example $T(4)$:

```
X

X X

X X X

X X X X
```

Write a program to compute the weighted sum of triangular numbers:

$$W(n) = SUM[k = 1..n; k * T(k + 1)]$$

Input

The first line of input contains a single integer N, ($1 \leq N \leq 1000$) which is the number of datasets that follow.

Each dataset consists of a single line of input containing a single integer n, ($1 \leq n \leq 300$), which is the number of points on a side of the triangle.

Output

For each dataset, output on a single line the dataset number, (1 through N), a blank, the value of n for the dataset, a blank, and the weighted sum, $W(n)$, of triangular numbers for n.

Sample Input

```
4
3
4
5
10
```

Sample Output

```
1 3 45
2 4 105
3 5 210
4 10 2145
```

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