Problem 28701 - Sum of Cubes   Multilingual

☆ | English ▾

Time Limit	Memory Limit	Submissions	Accepted	Solved	Ratio
0.25 seconds	1024 MB	4380	3216	3045	74.395%

Description

Eunha learned in class the following formula related to the sum of numbers from 1 to N and the sum of the cubes of numbers from 1 to N:

- $(1 + 2 + \cdots + N)^2 = 1^3 + 2^3 + \cdots + N^3$

Finding it unbelievable, Eunha decided to validate it by coding herself. Please output the sum of numbers from 1 to N, the square of that sum, and the sum of the cubes of numbers from 1 to N.

Input

The first line contains the integer N. ($5 \leq N \leq 100$)

Output

Output three lines:

- On the first line, output the sum of the numbers from 1 to N, i.e., $1 + 2 + \cdots + N$.
- On the second line, output the square of the sum of the numbers from 1 to N, i.e., $(1 + 2 + \cdots + N)^2$.
- On the third line, output the sum of the cubes of the numbers from 1 to N, i.e., $1^3 + 2^3 + \cdots + N^3$.

Sample Input 1 Copy

```
5
```

Sample Output 1 Copy

```
15
225
225
```

On the first line, output $1 + 2 + 3 + 4 + 5 = 15$.

On the second line, output $(1 + 2 + 3 + 4 + 5)^2 = 15^2 = 225$.

On the third line, output $1^3 + 2^3 + 3^3 + 4^3 + 5^3 = 1 + 8 + 27 + 64 + 125 = 225$.

Sample Input 2 Copy

```
100
```

Sample Output 2 Copy

```
5050
25502500
25502500
```

On the first line, output $1 + 2 + \cdots + 100 = 5\,050$.

On the second line, output $(1 + 2 + \cdots + 100)^2 = 5\,050^2 = 25\,502\,500$.

On the third line, output $1^3 + 2^3 + \cdots + 100^3 = 1 + 8 + \cdots + 1\,000\,000 = 25\,502\,500$.

Notes

The square of a is the number obtained by multiplying a twice, and it is expressed as a^2. So, $a^2 = a \times a$. Also, the cube of a is the number obtained by multiplying a three times, and it is expressed as a^3. Thus, $a^3 = a \times a \times a$.

Source

Contest (/category/45) > solved.ac (/category/859) > solved.ac Grand Arena #2 (/category/detail/3707) A번

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보기

Memo