

Rectangular Sum

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Memory Limit: 16 MB

Time Limit: 1.0 s

In this challenge, you are given a triangular board of n rows. The first row has one block, and the following rows have a block more than the previous row. All the blocks have the same size and are numbered as follows:

					row
				1	1
			2	3	2
		4	5	6	3
	7	8	9	10	4

First, you must find the biggest rectangular area inside the triangular board, and then calculate the value of S which corresponds to the sum of the values belonging to the area found. If there are several areas with the same size, choose the area that maximizes the value of S . For example, when $n = 5$:

					1
				2	3
			4	5	6
		7	8	9	10
	11	12	13	14	15

The maximum rectangular area is $(3 * 3)$, which is represented in the previous image.

$$S = 4 + 5 + 6 + 8 + 9 + 10 + 13 + 14 + 15 = 84$$

Remember that the area of a rectangle is the multiplication of the two sides of the rectangle.

Input

The first line of input contains an integer t ($1 \leq t \leq 10^5$) indicating the number of test cases that follow, one for line. Each test case contains a positive integer n ($1 \leq n \leq 10^{11}$) indicating the number of rows.

Output

For each test case, you should print a line containing **Case #x:** y , where x is the test case number (starting from 1) and y is the sum obtained. Note that this value is very large, so print the result modulo $10^9 + 7$.

Examples

Input	Output
6	Case #1: 1
1	Case #2: 5
2	Case #3: 16
3	Case #4: 42
4	Case #5: 84
5	Case #6: 3612
14	