Rectangular Sum

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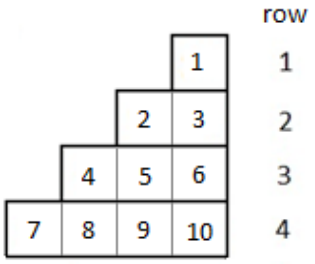
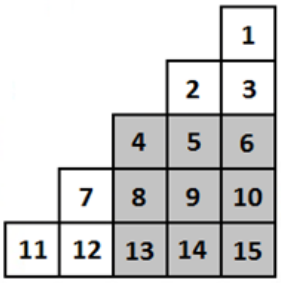
Memory Limit: 16 MB

Time Limit: 1 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:



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 $n = 5$:



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