

Lucky Number

The Kurukshetra OPC team observed that many online programming contests have a problem titled "Lucky Number". So we decided to have one in KOPC too.

We define the Lucky sequence as the infinite sequence of all integers, in ascending order, that can be represented as any positive integer power of 5 (i.e. 5^k where k is a positive integer) or as a sum of distinct positive integer powers of 5 (i.e. $5^{a_1} + 5^{a_2} + 5^{a_3} + \dots$, where a_1, a_2, a_3, \dots are distinct positive integers). All the numbers in the lucky sequence are called lucky numbers. The first few lucky numbers are 5, 25, 30, 125, 130, 150, ...

Given n your task is to find the n^{th} lucky number.

Input

First line of input contains an integer t , $t \leq 200$, representing the number of test-cases. Then t lines follow each containing one integer n , $1 \leq n \leq 8000$.

Output

For each test case output the n^{th} lucky number on a separate line. Answers will fit in a 32-bit signed integer.

Example

Input:

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4
1
2
3
9
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Output:

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5
25
30
630
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