Lucky Numbers
Input File: LuckyIn.txt

Lucky Lazarus and his friends are conducting a lottery in which the winning ticket number is the n^{th} integer in a number sequence Lazarus has conceived. As shown below, the sequence generation process begins by placing the first 10,000 non-negative odd integers in ascending order. Since the second number in this sequence is 3, Lucky eliminates every 3^{rd} number in this sequence to form a new sequence. Since the third number in this new sequence is 7, every 7^{th} number in this new sequence is eliminated from it to form a new sequence. Since the forth number in this new sequence is 9, every 9^{th} number in this new sequence would be eliminated from it to form a new sequence. This process is repeated until the n^{th} number in the sequence is generated, which is the winning number.

The sequence generating process is shown below for $n = 4$, which yields a winning number of 9.

1 3 5 7 9 11 13 15 17 19 21…	The sequence of positive odd integers in ascending order
1 3 7 9 13 15 19 21…	Every third number removed from the previous sequence
1 3 7 9 13 15 21…	Every seventh number removed from the previous sequence

Inputs
The first line of input contains the number of Lottery games to consider. For each of these games, there will be one line of input that specifies sequence term, n, of the winning ticket number.

Outputs
There will be one output per Lottery game that contains the winning ticket number for that game.

Sample Inputs	**Sample Outputs**
5	1
1	115
26	93
22	13
5	19993
2066	