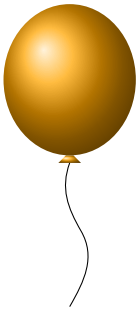
XAPC Algorithmic Programming Contest > badas

A McCarthy function



Time limit: 1.0s
Memory limit: 256MB

Last night, you had a strange dream. In it, you discovered a mysterious function $f(n)$ defined over integers. Upon waking up, the definition was still clear in your mind:

$$f(n) = \begin{cases} n + 20 & \text{if } n < 48, \\ f\big(f(n - 21)\big) & \text{if } n \geq 48. \end{cases}$$

Curious about what this function actually computes, you decide to evaluate it for various values of n.

Input

The first line contains a single integer t ($1 \leq t \leq 10^5$) — the number of test cases. Each of the next t lines contains a single integer n ($1 \leq n \leq 10^{18}$).

Output

For each test case, output a single integer — the value of $f(n)$.

Each answer should be printed on its own line.

Samples

Sample input 1	Sample output 1
4 1 2 25 48	21 22 45 67