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Volume

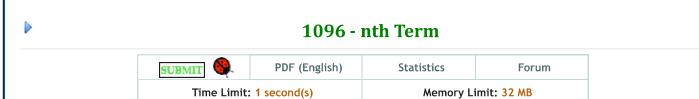
Contest

Training

Community Credits

Server Time: Thu Aug 3, 2017 9:30 pm

Welcome Nitai Banik (logout)



You have to find the n^{th} term of the following function:

$$f(n) = a * f(n-1) + b * f(n-3) + c, if(n > 2)$$

= 0, if(n \le 2)

Input

Input starts with an integer T (≤ 100), denoting the number of test cases.

Each case contains four integers n ($0 \le n \le 10^8$), a b c ($1 \le a$, b, c ≤ 10000).

Output

For each case, print the case number and f(n) modulo 10007.

| Sample Input | Output for Sample Input |
|--------------|-------------------------|
| 2 | Case 1: 162 |
| 10 1 2 3 | Case 2: 27 |
| 5 1 3 9 | |

PROBLEM SETTER: JANE ALAM JAN

Developed and Maintained by JANE ALAM JAN

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