Valar Morghulis Question-4

Let $g(n) = g(n-1) + 3g(n-3) + 2n$.

Given **n**, calculate the value of $g(n)$ **modulo 1000000007**.

Input Format

The First Line of Input consists of a single positive integer **t** denoting the number of test cases.

Each test case contains two lines:-

- The first line contains three space separated integers representing $g(0)$, $g(1)$ and $g(2)$.
- The second line contains a single integer representing **n**.

Constraints

- $1 \leq t \leq 10^3$
- $1 \leq g(0), g(1), g(2), n \leq 10^9$

Output Format

For each of the test case output a single positive integer.

Sample Input 0

```
2
1 2 3 4
1 2 3 5
```

Sample Output 0

```
26
45
```