

Problem C. Paint

When lwh took part in the big company interview, the interviewer gave a hard question to lwh, lwh felt it too simple, so he threw the question to you, the question is: You have a grid of size $n \times 3$ and you want to paint each cell of the grid with exactly one of the three colours: Red, Yellow or Green while making sure that no two adjacent cells have the same colour (no two cells that share vertical or horizontal sides have the same colour).

Input

Only a positive integer $n(1 \leq n \leq 5000)$ the number of rows of the grid.

Output

Return the number of ways you can paint this grid. As the answer may grow large, the answer must be computed modulo $10^9 + 7$.

Example

standard input	standard output
1	12