

A. RYB Coloring (colors)

Time limit: 1.0 second

Memory limit: 256 MiB

Ahmet and Mehmet **Burak** are participating in the Al-Khwarizmi International Olympiad held in the historic city of Tashkent, Uzbekistan. Although they are the best of friends, there is one rare topic they passionately disagree on: their favorite sports teams in Türkiye. Ahmet has a soft spot for Galatasaray and the Yellow-Red colors, while Mehmet **Burak** proudly supports Fenerbahçe and the Yellow-Blue. During the cultural excursion, while resting at a traditional *choyxona* (teahouse) near the Khast Imam complex, sipping *kok choy* (green tea) and admiring the stunning blue-domed architecture of the city, they decide to settle their colorful rivalry by inventing a game to challenge each other's strategic thinking.

The game is played on a strip of paper consisting of N initially white cells in a single row. The game features a sliding cover mechanic that progressively reveals the board:

- At the very beginning, only the first two cells from the left (cell 1 and cell 2) are uncovered and available to be colored (if they exist).
- Right before every subsequent turn (starting from Mehmet **Burak**'s first turn), the cover slides one step to the right, uncovering exactly one new cell. This progressive revealing continues until all N cells are uncovered.

The players take alternating turns, with Ahmet taking the first turn. On each turn, a player must choose exactly one of the currently uncovered white cells and color it.

- Ahmet has two pencils: Yellow and Red.
- Mehmet **Burak** has two pencils: Yellow and Blue.

The game ends when all N cells have been colored. Then, the points are calculated as follows:

- Ahmet gains 1 point for every pair of adjacent cells colored Yellow and Red (in any order).
- Mehmet **Burak** gains 1 point for every pair of adjacent cells colored Yellow and Blue (in any order).

The final score of the game is defined as:

$$\text{Final Score} = (\text{Ahmet's Points}) - (\text{Mehmet **Burak**'s Points})$$

Ahmet plays optimally to maximize the final score, while Mehmet **Burak** plays optimally to minimize the final score. Given the number of cells N , determine the final score of the game.

Input

The first and only line of the input contains a single integer N , representing the number of cells on the paper strip.

Output

Print a single integer representing the final score of the game, assuming both Ahmet and Mehmet **Burak** play perfectly optimally.

Constraints

- $1 \leq N \leq 10^5$

Scoring

- **Subtask 1 (12 points):** $1 \leq N \leq 3$
- **Subtask 2 (15 points):** $1 \leq N \leq 7$
- **Subtask 3 (36 points):** $1 \leq N \leq 10^5$, and N is an even number.
- **Subtask 4 (37 points):** No additional constraints.

Examples

standard input	standard output
4	0
5	1

Explanation

In the first example ($N = 4$), Mehmet **Burak** can mentally group the cells into pairs (1, 2) and (3, 4). In the first turn, **Ahmet** must play in the uncovered $\{1, 2\}$ set. When it is Mehmet **Burak**'s turn, cell 3 uncovers, making the available cells the one **Ahmet** left empty and cell 3. Mehmet **Burak** simply ignores cell 3 and colors the cell **Ahmet** left empty, perfectly completing the pair. By mirroring **Ahmet**'s color choices in these pairs (e.g., placing Blue next to **Ahmet**'s Yellow), Mehmet **Burak** ensures **Ahmet** gains no net advantage, resulting in a score of 0.

In the second example ($N = 5$), the length is odd. **Ahmet** can force a win by playing defensively with Red. On his first turn (cells 1 and 2 open), **Ahmet** colors cell 2 Red. On Mehmet **Burak**'s turn (cell 3 opens, making cells 1 and 3 available), Mehmet **Burak** colors one of them. **Ahmet** continues to color the newly revealed even-numbered cells Red. On his final turn, **Ahmet** places his only Yellow cell on the last remaining odd-numbered position. Because **Ahmet** secured all even positions with Red, his final Yellow cell will definitely be adjacent to at least one Red cell, and never adjacent to Mehmet **Burak**'s Blue cells. Thus, **Ahmet** guarantees a score of 1.