



5794. Sum Game

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Alice and Bob take turns playing a game, with **Alice starting first**.

You are given a string `num` of **even length** consisting of digits and `'?'` characters. On each turn, a player will do the following if there is still at least one `'?'` in `num`:

1. Choose an index `i` where `num[i] == '?'`.
2. Replace `num[i]` with any digit between `'0'` and `'9'`.

The game ends when there are no more `'?'` characters in `num`.

For Bob to win, the sum of the digits in the first half of `num` must be **equal** to the sum of the digits in the second half. For Alice to win, the sums must **not be equal**.

- For example, if the game ended with `num = "243801"`, then Bob wins because $2+4+3 = 8+0+1$. If the game ended with `num = "243803"`, then Alice wins because $2+4+3 \neq 8+0+3$.

Assuming Alice and Bob play **optimally**, return `true` if Alice will win and `false` if Bob will win.

User Accepted:	0
User Tried:	0
Total Accepted:	0
Total Submissions:	0
Difficulty:	Medium

Example 1:

Input: `num = "5023"`

Output: `false`

Explanation: There are no moves to be made.

The sum of the first half is equal to the sum of the second half: $5 + 0 = 2 + 3$.

Example 2:

Input: `num = "25??"`

Output: `true`

Explanation: Alice can replace one of the `'?'`s with `'9'` and it will be impossible for Bob to make a move.

Example 3:

Input: `num = "?3295???"`

Output: `false`

Explanation: It can be proven that Bob will always win. One possible outcome is:

- Alice replaces the first `'?'` with `'9'`. `num = "93295???"`.
- Bob replaces one of the `'?'` in the right half with `'9'`. `num = "932959??"`.
- Alice replaces one of the `'?'` in the right half with `'2'`. `num = "9329592?"`.
- Bob replaces the last `'?'` in the right half with `'7'`. `num = "93295927"`.

Bob wins because $9 + 3 + 2 + 9 = 5 + 9 + 2 + 7$.

Constraints:

- $2 \leq \text{num.length} \leq 10^5$
- `num.length` is **even**.
- `num` consists of only digits and `'?'`.

JavaScript



```
1 /**
2  * @param {string} num
3  * @return {boolean}
4  */
5 var sumGame = function(num) {
6
7 };
```

☐ Custom Testcase☒ Use Example Testcases

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