1753. Maximum Score From Removing Stones

Hint   ⋯

Medium   ⊘   👍 812   👎 48   ☆   ⌲

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You are playing a solitaire game with **three piles** of stones of sizes `a`, `b`, and `c` respectively. Each turn you choose two **different non-empty** piles, take one stone from each, and add `1` point to your score. The game stops when there are **fewer than two non-empty** piles (meaning there are no more available moves).

Given three integers `a`, `b`, and `c`, return *the **maximum score** you can get.*

Example 1:

Input: a = 2, b = 4, c = 6
Output: 6
Explanation: The starting state is (2, 4, 6). One optimal set of moves is:
- Take from 1st and 3rd piles, state is now (1, 4, 5)
- Take from 1st and 3rd piles, state is now (0, 4, 4)
- Take from 2nd and 3rd piles, state is now (0, 3, 3)
- Take from 2nd and 3rd piles, state is now (0, 2, 2)
- Take from 2nd and 3rd piles, state is now (0, 1, 1)
- Take from 2nd and 3rd piles, state is now (0, 0, 0)
There are fewer than two non-empty piles, so the game ends. Total: 6 points.

Example 2:

Input: a = 4, b = 4, c = 6
Output: 7
Explanation: The starting state is (4, 4, 6). One optimal set of moves is:
- Take from 1st and 2nd piles, state is now (3, 3, 6)
- Take from 1st and 3rd piles, state is now (2, 3, 5)
- Take from 1st and 3rd piles, state is now (1, 3, 4)
- Take from 1st and 3rd piles, state is now (0, 3, 3)
- Take from 2nd and 3rd piles, state is now (0, 2, 2)
- Take from 2nd and 3rd piles, state is now (0, 1, 1)
- Take from 2nd and 3rd piles, state is now (0, 0, 0)
There are fewer than two non-empty piles, so the game ends. Total: 7 points.

Example 3:

Input: a = 1, b = 8, c = 8
Output: 8
Explanation: One optimal set of moves is to take from the 2nd and 3rd piles for 8 turns until they are empty.
After that, there are fewer than two non-empty piles, so the game ends.

Constraints:

- `1 <= a, b, c <= 10^5`

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